David Moschella pinpoints the forces threatening IT's long period of relative stability. PAGE 22

Jerry McElhatton, MasterCard's retiring IT chief, says it's OK to have some fun while staying on top of technology. PAGE 14

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NOVEMBER 22, 2004 VOL 38 NO 47 $5/COPY

Best Buy Hit With Lawsuit Over Layoffs of IT Workers

Retailer denies claims of age discrimination by 44 ex-employees

BY CAROL SLIWA

Richard Walstrom said that he sensed something was wrong during a job fair in May, when he saw some of his IT co-workers who had also recently been told by Best Buy Co. that they were losing their jobs.

"There were a high perceotage of people with gray hair," said Walstrom, who's 57. "It was a lot of us. I didn't really realize what had happened until you look around and say, 'What's wrong with this picture?' "

Walstrom was one of 44 former Best Buy IT workers who filed a class-action lawsuit last Wednesday claiming that the Richfield, Minn.-based electronics retailer engaged in a pattern of age discrimination in terminating their jobs. The plaintiffs range from 40 to 71 years old, and their average age is 51, according to the lawsuit, which was filed in U.S. District Court in Minnesota.

INSIDE PAGE 7

The charges relate to

Best Buy, page 16

FTC Charges Firms Over Web Breaches

Action may portend further security, privacy crackdowns

BY JAIKUMAR VIJAYAN

Last week's move by the Federal Trade Commission to charge three companies with privacy and security violations highlights the increasing risk facing businesses that fail to meet state and federal standards for protecting confidential data.

The agency reached a settlement with San Diego-based Petco Animal Supplies Inc. on charges that a security flaw in its Web site had exposed customers' credit card numbers to hackers. The flaw violated Petco promises to keep customer data safe, the FTC said.

A settlement was also reached with Sunbelt Lending Services Inc. in Clearwater, Fla., while negotiations continue with Nationwide Mortgage Group Inc. in Fairfax, Va.

The charge against Petco

FTC, page 16

Linux UNCHAINED

Linux use is growing so fast that some companies have a hard time finding enough trained people to do the work. PAGE 37

$50M SAP Rollout Runs Into Trouble in Tacoma

Added costs, snafus mar big-bang project

BY MARC L. SONGINI

Cost overruns, glitches and other bumps hit during a $50 million-plus rollout of SAP AG's ERP, CRM and other business applications in the city of Tacoma, Wash., have generated a storm of bad press and end-user complaints, and a call from a city councilor for an audit to determine the causes of the problems.

Some Tacoma administrators said they believe that overall, the year-old implementation of SAP R/3 has been successful. But they acknowledged that complaints about the system's payroll, billing, budgeting and customer service performance have proved to be a thorny problem.

ONLINE

Moreover, the city has had to pay nearly $700,000 to Tacoma-based integrator TUI

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Wild Card Contracts
In the Management section: When a hired developer plans to resell your custom software, your intellectual property rights and eveo future profits are at stake. Put away the boilerplate and start dealing. **Page 40**

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7 **Sears and Kmart claim** that their merger will lead to IT efficiencies, but reconciling the retailers' systems could be a tall order.

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The 21st Century CIO

CAREERS: Korn/Ferry International's Mark Polansky discusses 10 key issues CIOs will be dealing with in the years ahead as their role continues to evolve within the corporate structure. **QuickLink 50030**

Convenience or Security?

E-BUSINESS: Consumers want easy access *and* safety, but more of one usually means less of the other. Columnist Larry Ponemon delves into survey results to help you strike a balance your customers will accept. **QuickLink 50068**

VoIP Checklist

SECURITY: Voice over IP opens voice communications to the same types of security threats that expose data transfer to attacks, says Sharon Besser of Check Point Software Technologies. But there are steps you can take to safeguard your network. **QuickLink 49096**

Pitfalls of Storage Management

STORAGE: Systems architect Mark W. Bradley takes a look at tools that can help administrators avoid common data management errors. **QuickLink 49535**

Hands On: Streaming Media To 2.5/3G Cell Phones

MOBILE/WIRELESS: During a consulting project, columnist Yuval Kossovsky evaluates and sets up streaming servers and their accompanying systems. **QuickLink 50079**

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AT DEADLINE

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NOVELL BY THE NUMBERS

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But reconciling IT systems will be tall order, analysts say

BY CAROL SLIWA

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Not surprisingly, the two companies have accumulated plenty of different systems. At the store level, Kmart in 2001 announced that it was buying IBM SurePOS 700 cash registers running the vendor's point-of-sale operating system.

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BY JAIKUMAR VIJAYAN

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Oracle's adoption of a regular patching schedule "is going to make it a lot easier for companies to plan for these [fixes]," said Rich Niemiec, a former president of the International Oracle Users Group and the CEO of TUSC, a Chicago-based Oracle technology consulting firm.

"It's good news for users," agreed Howard Mulfler, director of enterprise services at Embry-Riddle Aeronautical University in Daytona Beach, Fla. The school uses a wide variety of Oracle products, and Mulfler said that having a predictable patch update schedule will eliminate the "waiting game."

In August, Oracle said it was considering the adoption of a monthly patch release schedule, similar to the approach that Microsoft Corp. has been using since October 2003. But users favored the quarterly plan, Davidson said. A three-month cycle "seemed to be something they could live with," she said, adding that Oracle will release out-of-cycle patches if the situation calls for them.

Quarterly updates make sense for patching database servers, said Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa. Given how important database servers are to companies, systems administrators are unlikely to want to patch them more frequently than that, he said.

In its Nov. 11 research note, Gartner took Oracle to task for not disclosing enough details about the vulnerabilities addressed by the August patch, which was dubbed Patch 68 and given Oracle's highest severity rating. Oracle reissued an alert related to the patch in mid-October after proof-of-concept exploit code began circulating on the Internet.

"If you don't tell the good guys what the problem is, they don't have a way to evaluate the severity," said Gartner analyst Rich Mogull. He added that Gartner, which is advising its clients to install the patch, has heard from several Oracle database administrators who are nervous about doing so.

Davidson defended Oracle's stance and said the company released all the information users need to install the patch. Oracle is trying to provide enough information about security problems without giving hackers "a road map" for taking advantage of flaws, she said.

Lindstrom concurred with Oracle's reasoning. He said Gartner is assuming that "bad guys always know more than the good guys" about software vulnerabilities, when that's not necessarily the case. 50941

AT DEADLINE

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OS UPGRADE

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Oracle's adoption of a regular patching schedule "is going to make it a lot easier for companies to plan for these [fixes]," said Rich Niemiec, a former president of the International Oracle Users Group and the CEO of TUSC, a Chicago-based Oracle technology consulting firm.

"It's good news for users," agreed Howard Muffler, director of enterprise services at Embry-Riddle Aeronautical University in Daytona Beach, Fla. The school uses a wide variety of Oracle products, and Muffler said that having a predictable patch update schedule will eliminate the "waiting game."

In August, Oracle said it was considering the adoption of a monthly patch release schedule similar to the approach that Microsoft Corp. has been using since October 2003. But users favored the quarterly plan, Davidson said. A three-month cycle "seemed to be something they could live with," she said, adding that Oracle will release out-of-cycle patches if the situation calls for them.

Quarterly updates make sense for patching database servers, said Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa. Given how important database servers are to companies, systems administrators are unlikely to want to patch them more frequently than that, he said.

In its Nov. 11 research note, Gartner took Oracle to task for not disclosing enough details about the vulnerabilities addressed by the August patch, which was dubbed Patch 68 and given Oracle's highest severity rating. Oracle reissued an alert related to the patch in mid-October after proof-of-concept exploit code began circulating on the Internet.

"If you don't tell the good guys what the problem is, they don't have a way to evaluate the severity," said Gartner analyst Rich Mogull. He added that Gartner, which is advising its clients to install the patch, has heard from several Oracle database administrators who are nervous about doing so.

Davidson defended Oracle's stance and said the company released all the information users need to install the patch. Oracle is trying to provide enough information about security problems without giving hackers "a road map" for taking advantage of flaws, she said.

Lindstrom concurred with Oracle's reasoning. He said Gartner is assuming that "bad guys always know more than the good guys" about software vulnerabilities, when that's not necessarily the case. **50941**

BRIEFS

EDS Reports Weak Results for Q3

Electronic Data Systems Corp. blamed the delayed Navy/Marine Corps Intranet project and other woes for the weak third-quarter financial results it reported last week. The report was delayed several times because of accounting issues. EDS is also restating its third and fourth quarters of 2003.

EDS BY THE NUMBERS

REVENUE	
Q3 '04	$5.2B
Q3 '03	$5.6B

Microsoft Courts NetWare Users

Microsoft Corp. last week stepped up its efforts to persuade users of Novell Inc.'s NetWare to switch to Windows Server 2003, releasing migration products and support programs for the move. Novell has strengthened its Linux offerings, rolling out a desktop Linux version this month. Microsoft will offer training vouchers, online technical support and migration tools.

Retek Buys Syncra To Extend CRM Line

Retek Inc. in Minneapolis last week acquired the assets of Syncra Systems Inc. in Waltham, Mass., for less than $5 million in cash in order to expand its line of supply chain management tools. The Syncra tools let retailers work with suppliers on promotion planning, consumer demand forecasting and inventory management.

Seagate Adds 400GB Hard Drive

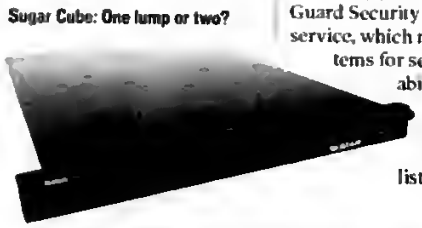
Seagate Technology LLC last week released a 400GB hard disk drive targeted at PCs. The drive is the fourth member of Seagate's Barracuda 7200.8 series and includes versions with an Ultra ATA/100 interface and a Serial ATA interface. The speed of the disc is 7,200 rpm, with an average seek time of 8 milliseconds. Pricing wasn't disclosed.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

Open-Source Vendor Sweetens CRM Pot . . .

. . . with Sugar Cubes – two, to be precise. SugarCRM Inc. in Cupertino, Calif., began shipping the alpha version of its open-source Sugar Sales Professional software in the spring, released the product commercially in September [QuickLink 49314] and made Version 2.0 available last month. This week the speedy vendor delivers a pair of preconfigured, Linux-based appliances called Sugar Cubes. The 1005 costs $4,495 and can handle up to 100 users, and the 3005 starts at $7,995 and can support up to 400 people. SugarCRM's software runs on the "LAMP stack" of Linux, Apache, MySQL and PHP. The entire application was written in PHP, which gives it exceptional performance, says Jacob Taylor, SugarCRM's vice president of engineering and co-founder. In fact, the company is so proud of the software's performance that with each page refresh, it displays the response time. If you get tired of paying the annual support fee of $239 per user for Sugar Sales Professional, you can simply stop — and keep your data, the application and, of course, the source code, which can be customized by your own PHP gurus to your heart's content. Tara Smith, SugarCRM's director of marketing, claims that gives her company a big edge over Salesforce.com Inc. "If you leave Salesforce, you get your data but not the app to run it," she says.


Sugar Cube: One lump or two?

Security tool's link to Remedy . . .

. . . can help IT staffers manage and fix network vulnerabilities. By year's end, Solutionary Inc. in Omaha plans to complete pilot tests of integration hooks to BMC Software Inc.'s Remedy IT help desk tools. The hooks are being built into an upgrade of its ActiveGuard Security Management service, which monitors systems for security vulnerabilities. Remedy users will be able to get a prioritized list of security problems that ActiveGuard finds and then use the information to issue trouble tickets to the appropriate IT workers. IT security personnel don't always know who's the best choice to fix a problem, says Mike Hrabik, Solutionary's chief technology officer. So, he argues, it's essential to correct known security problems through an established IT management process, such as Remedy-generated trouble tickets. That can be particularly important after a company does a large-scale vulnerability assessment, which often reveals thousands of security holes. "How do you bubble up the things you need to do first?" Hrabik asks. "And how do get the right people to fix them?" ActiveGuard will answer the first question, he says, and the second can be resolved through the integration with Remedy. Shipments are expected to begin in the first half of next year.


HRABIK
Link security tools to help desk apps

The more (variables), the merrier . . .

. . . the results will be for users of business intelligence tools. But that's difficult to achieve with BI models that can take weeks to create and still include only a handful of variables. And most users find themselves having to rely on such models now, claims Joerg Rathenberg, vice president of marketing and communications at San Francisco-based KXEN Inc. In contrast, he says, his company's KXEN Analytic Framework tools use advanced modeling techniques based on the statistical learning theories of Vladimir Vapnik, a Russian-born mathematician who is now a research fellow at NEC Laboratories America Inc. and a professor of computer science at Columbia University in New York. KXEN's software can automatically build predictive models with hundreds or even thousands of variables, according to Rathenberg. He says it can take up to three weeks for a statistician using conventional tools to create a working model that business analysts can use to find "rules" among the information in a data warehouse. "We can do three or four models a day," he says. Release 3.11 is due next month with new association capabilities that rank the most relevant rules divined from BI queries.

Antispam software market heats up . . .

. . . with a competitive "trade up" program from Cloudmark Inc. According to CEO Karl Jacob, the San Francisco-based vendor will let corporate users of rival technologies test its Cloudmark Immunity software. And if they like Immunity better than what they already use, they can keep the software and won't have to pay anything for it "until they stop paying for their current antispam product," Jacob says. He argues that IT managers rushed in tools to dam the flood of spam and that many companies are now dissatisfied with the results — either spam keeps coming, or the false-positive rates are too high. Although most antispam products offer plug-ins for Outlook, few integrate with Lotus Notes. For Cloudmark, that's due to end in next year's first quarter, when the company plans to release an upgrade with built-in links to Notes mail clients. **50893**

$1.7B
Radicati Group Inc.'s estimate of 2008 antispam market

BRIEFS

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Q3 04	$4.95B	$153M
Q3 03	$5B	$16M

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Users Say Nortel Continues To Deliver, Despite Problems

Financial review raises concerns but isn't seen as reason to abandon vendor

BY MATT HAMBLEN

TEN LONGTIME customers of Nortel Networks Corp. said last week that they want the networking equipment vendor to wrap up its yearlong internal accounting probe as soon as possible. But they all said they're still committed to using its products.

On Nov. 11, Nortel again delayed the release of its financial results for 2003 and the first half of this year, saying it would need another 30 to 60 days to complete its review of revenue recognition issues and other matters dating back to 1999. Financial analysts reacted sharply, with some of them warning that the continuing delays could cause Nortel to be delisted by stock exchanges in Toronto and New York.

Users such as Mike Hazdra, telecommunications manager at Benedictine University in Lisle, Ill., said they are well aware of the latest financial update from Nortel. Hazdra described the new delay as "a fiasco" for Nortel and said it makes him "wonder what's going on" at the Brampton, Ontario-based vendor.

"It has made me a less-staunch Nortel supporter, even though their technology is really good," Hazdra said. But he added that Nortel still offers "the best phone system you can buy" and that a stock delisting or even more dire developments at Nortel likely wouldn't affect him immediately. "If that happens, I'll still have a Nortel switch and can still get replacement parts for it," he said. "I'll have it sitting here until it rusts."

Grant Eberlin, manager of IT at NRI Industries Inc., a maker of recycled rubber products in Toronto, said he also has grown more concerned about Nortel as the accounting probe has been prolonged.

"These circumstances must be distracting the company from carrying out its business strategy," said Eberlin, who has used the company's Meridian voice switch and other gear since 1992. "How can you have your eyes on the ball of getting out there with products when you're fighting your financials?"

Potential Fallout

Caren Hart, a board member of the Chicagoland Nortel Networks Users Association, said she worries about reduced support from Nortel if there is further fallout from the probe. Hart is a telecom manager at an insurance company that she asked not be identified. It uses Nortel products in 54 offices nationwide.

> **"We feel [Nortel is] a strong engineering company, and the proof is that they continue to deliver, even during this difficult time."**
>
> GREG BRITZ, MANAGER OF TELECOM ENGINEERING, BNSF

On the other hand, Margaret Rettig, a telecommunications manager at a global manufacturing company, said the internal probe hasn't had any adverse impact on the level of service she receives from the company.

"If anything, Nortel has been much more attentive to us," added Rettig, who also asked that her company not be named. She is a board member of the Chicago-based International Nortel Networks Users Association, which includes the Chicagoland chapter and 69 other regional groups.

The Burlington Northern and Santa Fe Railway Co. uses Nortel products throughout its networks. Greg Britz, BNSF's manager of telecom engineering, said IT executives at the Fort Worth, Texas-based company recently were told by outside technology analysts that Nortel is still a solid vendor.

The analysts did say that if Nortel's revenue fell significantly, it could affect the company's ability to develop new products. "But our experience over the last two years with Nortel has been quite good," Britz said. "We feel they're a strong engineering company, and the proof is that they continue to deliver, even during this difficult time." **50908**

MORE ONLINE

Nortel says that despite its financial troubles, customers aren't pulling contracts:
QuickLink 50910
www.computerworld.com

Four Vendors Team Up On Standardized Linux

Red Hat and Novell decline to join with second-tier firms

BY TODD R. WEISS

Four small Linux vendors last week said they're joining together to create a common code base in an effort to attract more independent software vendors and hardware makers to support their versions of the open-source operating system.

The four companies are Conectiva SA, MandrakeSoft SA, Progeny Linux Systems Inc. and Turbolinux Inc. Progeny has headquarters in Indianapolis, while Conectiva, Mandrakesoft and Turbolinux are based in Brazil, France and Japan, respectively.

Linux market leaders Red Hat Inc. and Novell Inc. both declined invitations to take part in the joint initiative. A Novell spokesman said company officials are supportive of the new group, but "at this point, we're simply giving them moral support."

Ian Murdock, chief strategist and co-founder of Progeny and a founder of the Debian open-source project, said the idea behind the Linux Core Consortium is to help reduce incompatibilities for users and independent software vendors by building a single code base that's compliant with the Linux Standard Base 2.0 specifications.

Individually, the four companies don't have the clout or customer base to attract strong interest from software and server makers, Murdock said. They hope to change that by developing the common set of core binaries, which is due to be available for incorporation into their operating systems in next year's first quarter.

But the vendor group has its work cut out for it, said Stacey Quandt, an analyst at Robert Frances Group Inc. in Westport, Conn. "I understand what they're doing," Quandt said. She predicted, though, that the effort "will have limited success" because Red Hat and Novell's SUSE Linux unit already offer independent software vendors the Linux platforms they need to support.

Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H., said he also doesn't expect the Linux consortium to attract a huge amount of interest from the software vendors. "I'm skeptical it's going to make a big difference," he said, noting that many of the vendors don't want to support more than one or two Linux brands.

Different Outlooks

Murdock acknowledged that the presence of Red Hat and Novell would "make the result of the initiative stronger." But he said it's understandable that they don't feel the same need to join in as the other vendors do. "They're probably happier with the current situation than the rest of us," he said. "But we firmly believe that situation isn't in the best interest of the industry in the long haul. We hope they come to thinking the same way."

The Linux Core Consortium is reminiscent of UnitedLinux, a joint initiative that was set up in May 2002 by Conectiva, Turbolinux, Caldera International Inc. and SUSE Linux AG prior to its acquisition by Novell. Caldera has since renamed itself The SCO Group Inc.

UnitedLinux largely came undone after Lindon, Utah-based SCO began its legal campaign against Linux vendors and users in March 2003.

Murdock said the new effort will incorporate some of the lessons learned from UnitedLinux. "It was a great idea that was badly executed," he said. "In a lot of ways, we're trying to realize the potential UnitedLinux had." **50946**

Reporter Carol Sliwa contributed to this story.

LINUX NEWS

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QuickLink s1000
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someone planned ahead... someone didn't

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BRIEFS

Sun Offers Mustang Betas to Developers

Sun Microsystems Inc. last week opened the next version of its Java 2 Platform Standard Edition (J2SE 6.0, code-named Mustang) to developers. The move represents the first time Sun has made source and binary code bundles available for a J2SE release still in development, Sun said. The company plans to release source code weekly. The J2SE version is slated to ship by mid-2006.

Symantec, MX Join On E-mail Defense

Symantec Corp. and MX Logic Inc. unveiled a managed e-mail defense service that they said can help businesses reduce bandwidth and storage costs. The service joins Symantec's Brightmail Anti-Spam 6.0 and the MX Logic Email Defense Service into two packages said by MX Logic.

NetApp Reports Improved Results

Networked storage supplier Network Appliance Inc. reported improved results last week as a result of growth across all product lines, segments and geographies, said CEO Dan Warmenhoven. Revenue for its second quarter of 2005 increased 36% over the previous year. Profits grew 14%.

BY THE NUMBERS

Q2 05	$375M	$55.3M
Q2 04	$276M	$48.4M

Niku Releases Governance Tools

Niku Corp. in Redwood City, Calif., last week introduced a version of its Clarity IT management software with new features supporting global IT governance activities. Clarity Version 7.5 provides central oversight over regional IT activities, including analytics to help determine IT worker costs. The software runs on a variety of Unix platforms and Windows 2000 and is priced from $100,000. It ships next month.

HP's AlphaServer Sales Continue Steep Decline

The vendor's expected OpenVMS Itanium version should be death knell

BY PATRICK THIBODEAU

THE VENERABLE AlphaServer is fading as a source of revenue for Hewlett-Packard Co. as the company readies the general release of OpenVMS, one of Alpha's primary operating systems, for its Integrity server line.

In HP's fourth quarter, which ended Oct. 31, AlphaServer revenue fell 27%, the vendor reported last week. That followed a 32% revenue decrease in the prior quarter. An HP spokeswoman blamed the decline on users moving to the Integrity line, which is based on Intel Corp.'s Itanium processors.

HP plans to stop making the AlphaServer at the end of 2006 but will support the systems through 2011. The company said Integrity sales are up 5% from a year ago and represent 16% of its business-critical server revenue.

Varied Responses

Customers appear to be responding in a number of ways — not simply by buying Integrity servers. David Turner, sales manager at Island Computers US Corp., an AlphaServer reseller in Savannah, Ga., said sales of refurbished systems by his company are up 150% from last year.

Used AlphaSevers are gaining ground over new systems because users "don't want to spend three times the money for a system that might be obsolete in three years," said Turner. Sales of spare-parts kits are also rising, he said.

Nevertheless, some users are still buying new systems. Lee Mah, an OpenVMS systems administrator at a Canadian health care provider, said his employer recently purchased two 16-processor GS1280 AlphaServers. Mah said the health care provider couldn't wait for the Itanium version of OpenVMS, because it needed additional server capacity right away.

Mah expects to use his new AlphaServers for about three years before growth of the 29,000-employee organization forces an upgrade. At that point, his employer will have to decide whether to stay with OpenVMS, he said. But "other platforms don't have the reliability that OpenVMS has had for our applications," which include mostly custom-built software and third-party payroll processing, said Mah.

HP is expected to announce the availability of an OpenVMS implementation for Itanium as early as next month.

Tru64 Unix, also used on AlphaServers, is being phased out, and some of its features, such as TruCluster, are being added to HP-UX, another bad sign for AlphaServer users. "If you are running Tru64 Unix, you are dependent on Alpha," said Terry Shannon, an Amarillo, Texas-based consultant and publisher of the newsletter "Shannon Knows High Performance Computing."

HP's latest financial results showed a rebound after a dismal enterprise server revenue performance in the quarter that ended in July, when sales declined by 5%. Following those results, CEO Carly Fiorina fired three executives.

HP customers at HP World in August reported late deliveries and other supply problems. The company blamed the problems partially on an internal systems migration.

One of the users who had problems was Kees denHartigh, a systems and network analyst at the University of Alberta in Edmonton. He said the university ordered one storage array, but two were delivered.

But the university was happy with the initial storage array and "decided we could probably use two anyway," said denHartigh. "We ended up buying it." **50939**

HP Results

- Overall revenue at HP increased 8% to $21.4 billion in the quarter that ended Oct. 31.
- Enterprise storage and server revenue:
  - Q4: $4.1 billion; up 7% year over year
  - Q3: $3.4 billion; down 5% year over year

Air Force Consolidates Contracts, Software

Microsoft deal will standardize servers, desktops

BY DAN VERTON

The U.S. Air Force last week announced an enterprisewide software licensing agreement with Microsoft Corp. that's expected to save it more than $100 million over the next six years and help secure its PCs and Windows-based servers.

Air Force CIO John Gilligan was scheduled to detail the licensing and software standardizatioo initiative late Friday afternoon. In an advance statement, the Air Force said the deal with Microsoft will consolidate 38 software purchasing contracts and nine support pacts into two cootracts that all of its operations will be required to adopt.

The Air Force will also mandate the worldwide use of standard configurations of all Microsoft desktop and server software products.

Officials said that "rigorous security profiles" will be implemented and that security patches and software updates will be distributed to systems online. In addition, security, performance and software feature settings will be designed specifically for the Air Force.

Similar Government Pact

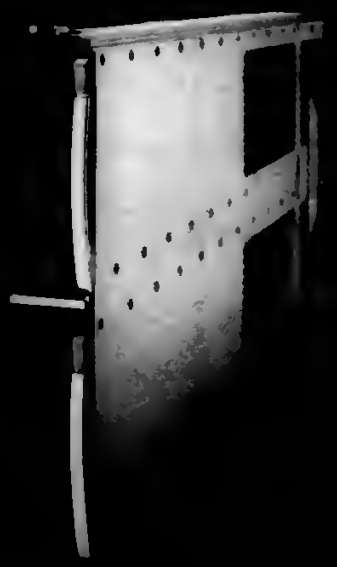
Some analysts said the deal appears to be similar to one the U.S. Department of Energy signed with Oracle Corp. in September 2003 that required Oracle to deliver software configured for optimal security [QuickLink 41700].

Clint Kreitner, presideot and CEO of the Center for Internet Security in Hershey, Pa., called the Air Force's move "a terrific example" of how large users can leverage their overall buying power to require vendors to deliver software configured to meet their functionality and security needs.

But John Pescatore, an analyst at Gartner Inc., said the new agreements with Microsoft may not be that big of a step forward. "It will force the Air Force to have more-secure configurations of Microsoft software by limiting how many versions they use and having configuration guidelines," be said. "But it sounds like they're building in a lot of patch management functions, and that doesn't force the vendnr to deliver software with fewer patches."

Alan Salisbury, chairman of the Center for National Software Studies in Upper Marlboro, Md., said standardization usually reduces costs.

"The name of the game continues to be total cost of operations, which is dominated by maintenance and support," he said. "Fewer configurations equals lower costs." **50947**



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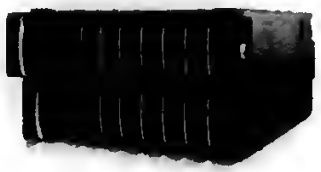

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GLOBAL NEWS

An International IT News Digest

South Korea Allocates Spectrum for WiBro

TOKYO

SOUTH KOREA's government last week allocated spectrum in the 2.3-GHz band for a new breed of wireless Internet service called WiBro that's expected to deliver 1Mbit/sec. connections to mobile devices.

WiBro, short for wireless broadband, is similar to WiMax, another emerging wireless broadband technology. Both are part of the IEEE 802.16 family of wireless standards. But South Korea's homegrown WiBro technology can work with devices, such as laptops and handhelds, that are traveling at up to 70 kilometers per hour, whereas WiMax was designed for stationary receivers.

South Korea's Ministry of Information and Communication, which set aside the spectrum for WiBro, said that it plans to offer licenses to three vendors in March and that it expects commercial services to start being offered in 2006.

GLOBAL FACT

The number of multinational corporate customers in China served by Equant NV, a global networking carrier in Amsterdam

But industry observers are worried about dueling technologies. Last week, the CEOs of Intel Corp. and Korea-based LG Electronics Inc. met in Seoul to discuss ways to merge the WiBro and WiMax technologies and avoid market segmentation.

■ MARTYN WILLIAMS IDG NEWS SERVICE

Australian Territory Plans VoIP Network

SYDNEY, AUSTRALIA

AUSTRALIA'S Northern Territory government plans to introduce IP telephony as part of a voice and data network overhaul that's expected to cost about $108 million (U.S.) over five years. The government is seeking bids from vendors for a contract that will cover all voice, data and Internet services for about 16,000 end users at 250 agency sites and 180 schools.

Brad Irvine, director of IT services management for the Northern Territory government, said the primary goal for implementing voice over IP is reducing the cost of long-distance carrier charges. "We feel we've picked a good time to go to market with VoIP, which is maturing and is a leading option for delivering more value for the money," he said. "Also, our consultants advise us that this is the way of the future."

■ ROONEY GEDDA
COMPUTERWORLD TODAY (AUSTRALIA)

Microsoft Beefs Up India Connections

BANGALORE, INDIA

MICROSOFT CORP. will hire several hundred staffers over the next 12 months for the software development and support operations at its new 28-acre campus near Hyderabad, India, CEO Steve Ballmer said last week during a three-day trip to the country. But Ballmer said the additional hiring won't lead to job losses in the U.S.

Microsoft also announced separate partnerships with Bangalore-based IT outsourcing firms Infosys Technologies Ltd. and Wipro Ltd.

Microsoft and Infosys signed an $8 million pact to combine Microsoft's .Net software with consulting services from Infosys to help companies implement product development, retail and radio frequency identification projects. **50894**

Compiled by Mitch Betts.

Briefly Noted

Iberbanda SA, a wireless operator in Madrid, has begun to install WiMax wireless broadband technology supplied by Alvarion Ltd., according to a spokeswoman for Tel Aviv-based Alvarion. Iberbanda is targeting business and residential customers in the Andalusia and Catalonia regions of Spain.

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Retiring MasterCard IT Chief Talks About Challenges

BY LUCAS MEARIAN

***Jerry McElhatton** started out as a police officer in Columbus, Ohio, and ended up as the chief technologist at MasterCard International Inc., overseeing 2,700 IT employees and a $100 million payroll. McElhatton, 65, MasterCard's senior executive vice president of global technology and operations, is retiring next month, a year after completing a five-year, $200 million rewrite of the company's processing systems and opening a $135 million operations center in O'Fallon, Mo.*

Now looking to join the consulting world, McElhatton spoke with Computerworld last week about the MasterCard project, IT trends, his management style, and finishing projects on time and within budget.

What are some of the bigger challenges you've faced at MasterCard over the years? When I came in, there had been attempts to rewrite these systems. They hadn't been successful, so one of the challenges was to get the talent and organization [to rally around a plan] to rewrite these systems in a meaningful way while keeping the other systems in place. It's like changing an airplane engine in flight.

What did you do differently from past IT managers there? We organized the effort into manageable segments. I recruited people who had a lot of experience both inside and outside of the industry. I can teach people the industry, but I need people who have confidence in terms of their delivery skills. One of the big challenges was not only to develop [relationships] internally, but to establish and make sure relationships with our members were such that we could get them on schedule to convert to the new software.

MCELHATTON went from police officer to MasterCard's IT chief.

How has the job of CIO changed over your career? There's more and more value extraction [that] people are looking for the CIO/CTO to give. You have to be a good business person. I've seen a lot of technology introduced that can help people do things better, faster, cheaper. But I've also seen a change that successful people in this industry have really extracted business value and manage IT as a business.

You have an open-door policy where anyone can e-mail or call you to voice concerns. Has that always been your style? I've done that throughout my career. In order to motivate people, you have to establish the right culture, and the right culture is to have an open and honest and direct culture. We've got a big job to do, and our customers, members and internal users expect us to be right at the top of that pile all the time, but that doesn't mean you can't have fun doing it.

What are some of the bigger challenges coming down the pike? We have lot of leading-edge technology, but we're not bleeding-edge. No one likes to have a problem with a financial transaction. The challenge we have is to take this infrastructure technology and new product technology and make sure it's fully integrated and fully tested, so when it's used we're 100% sure that it's going to be a successful transaction.

How do you manage vendor relationships? You have to have a partnership with your vendors, and they have to understand your expectations. Do we have problems with vendors from time to time? You bet. But if you have good communication and coordinate with them, you're going to get a lot better results.

What are some exciting emerging technologies? I get excited about grid computing. I don't think it's ready for commercial use yet, but we're excited about it. [Linux has] got potential to again drive down the economic dynamics of what it is we're doing. **50909**

GLOBAL

An International IT News Digest

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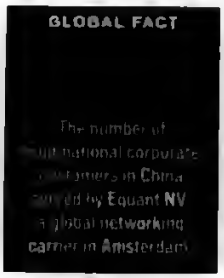

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Continued from page 1

Best Buy

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A spokeswoman for Best Buy said it hadn't received the complaint as of Thursday. But the retailer issued a statement saying it was aware of the suit. "We believe these claims are without merit and intend to vigorously defend the action," Best Buy said. It also stated that the average age of its 3,700 corporate employees is 35.

When it announced the outsourcing contract with Accenture, Best Buy said that only 40 of its 820 IT employees would remain with the company. The retailer expected about 650 workers to receive comparable job offers from Accenture and continue working at Best Buy's offices. The other employees were told that they would be let go.

According to the lawsuit, 126 IT workers were terminated in June. Stephen Snyder, the Minneapolis-based lead attorney for the plaintiffs, said that 82 of those workers were at least 40 years old — the minimum age required to file an age-discrimination claim. Thirty-one of the plaintiffs were among the workers who were dismissed in June.

The 13 other plaintiffs lost their jobs when Best Buy laid off a total of 25 IT workers last year, according to the lawsuit. Twenty of them were at least 40 years old, Snyder said. The lawsuit noted that another worker turned 40 the day after he was laid off.

Marshall Tanick, a Minneapolis-based employment lawyer who has handled at least 50 age discrimination complaints over the past 20 years, said the larger a group of plaintiffs is, the greater chance it has of success. The Best Buy suit is "an unusually large case, which makes it particularly potent," he said.

Snyder said the Best Buy suit involves the largest number of plaintiffs that his firm, Gray, Plant, Mooty, Mooty & Bennett PA, has represented in an age discrimination complaint. The previous high was 43 in a case against Monsanto Co. that was settled for $18.25 million in 1996, he said.

EXCERPT

"As part of its pattern or practice of discrimination, Best Buy has failed to provide its older [IT] employees with consideration for employment opportunities, has refused to transfer older employees into open positions for which they were qualified and has refused to re-hire its former employees for positions for which they were qualified."

"Computer industry employees are particularly vulnerable to age discrimination because of this commonly held perception that older individuals can't keep up with new technology," Snyder said. "As with any stereotype, that may apply to some people, but it doesn't apply to others."

He added that the most recent performance reviews for each of the plaintiffs had indicated that he was a "solid performer" or better.

Surprise Termination

"If you're doing your job well, getting good reviews and merit bonuses, you don't expect to get dumped," Walstrom said of his termination. "In that respect, it was a surprise."

Walstrom, who said he had worked at Best Buy for almost seven years, was a technical consultant assigned to special projects when he was let go in April. But he said that until September 2003, he was the manager of the company's database support group, which consisted of 21 employees and seven or eight contractors and was charged with ensuring the health of all corporate-level production databases.

Walstrom's group was then shifted from operations to Best Buy's database development team, he said, adding that he soon learned from his new boss that his job was going to someone else. "The guy picked to replace me had no experience managing databases," Walstrom said. "He had been a project manager. But he was about 20 years my junior. You look at that in hindsight and start figuring things out."

The plaintiffs asked for a jury trial and are seeking back pay and benefits, damages and an order that Best Buy either reinstate them to comparable jobs or give them salaries and benefits until they reach their expected retirement ages.

Not every former employee who was eligible to file an age-discrimination claim against Best Buy did so. Snyder said workers who accepted severance pay were required to sign a document releasing the company from all claims, including age discrimination complaints. **50942**

Continued from page 1

FTC

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As part of its settlement with the FTC, Petco must submit to independent biannual audits of its information security practices for the next 20 years. "The message here is that if a company is making security and privacy representations online, it should take reasonable and appropriate measures to secure sensitive information," said Alain Sheer, an attorney in the FTC's financial practices division.

The FTC has reached similar settlements with four other companies over the past couple of years (see chart).

Meanwhile, the FTC charged that Sunbelt, a Cendant Corp. subsidiary, and Nationwide failed to comply with the Gramm-Leach-Bliley Act's Safeguards Rule, which requires companies to apply reasonable measures for protecting sensitive information. Both were charged with "significant failures" to protect customer names, Social Security numbers, credit histories and other confidential data.

Nationwide Sweep

The action represents the first cases involving the Safeguards Rule. The companies were part of a "nationwide sweep" of auto dealers and mortgage companies, said Jessica Rich, assistant director of consumer protection at the FTC.

She said the FTC hopes the action sends a message that the Safeguards Rule applies not only to typical financial institutions but also to payday lenders, check cashers and tax preparers who handle sensitive personal information when conducting business.

As part of an agreement with the FTC, Sunbelt agreed to submit to biannual audits of its information security program for the next 10 years. In an e-mailed statement, Sunbelt said the FTC complaint stemmed from a "seldom-accessed lead generation program that was formerly available through Sunbelt's Web site" prior to the implementation of policies to comply with the Safeguards Rule.

John Fuhank, CEO of Nationwide Mortgage, confirmed the FTC action, but he claimed that his five-person company — which shares the name of the much larger insurance and financial services provider — may have gotten inadvertently caught up in a sweep targeted at big financial institutions. Fubank said the cost involved in bringing his small operation into compliance with the agency's requirements is prohibitive and may force him to shut down his business if no compromise can be found.

The latest FTC action is seen as indicative of the growing determination of federal and state authorities to crack down on security and privacy violations, even in instances where no actual breach may have occurred, said Michael Overly, an attorney at Foley & Lardner LLP in Los Angeles.

"We are seeing a real interest in policing these matters far more closely," Overly said. For instance, Barnesandnoble.com Inc. in April agreed to pay $60,000 and implement a comprehensive information security policy in a deal with the New York attorney general's office over a design vulnerability in the online bookseller's Web site. "In that case, no hack had occurred, and no exposure of data had taken place," Overly said. **50938**

GOVERNMENT CRACKDOWN

The FTC has reached settlements with several companies over security and privacy violations, including the following:

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Network Appliance Updates Data ONTAP Storage Platform

New 7G release will virtualize storage resources, vendor says

BY LUCAS MEARIAN

Network Appliance Inc. last week brought out the latest version of its Data ONTAP software, which it said builds a grid storage architecture on its appliances by creating an abstraction layer between application servers, storage controllers and disk arrays.

NetApp's Data ONTAP 7G software uses one global name space to give administrators a single view of storage resources. The system also pools processing power across its network-attached storage (NAS) arrays, said Chris Bennett, director of marketing at the Sunnyvale, Calif.-based company.

Data ONTAP 7G also includes a new tool called FlexVol, which allows volumes or identifiable units of storage to be spread across disk spindles in a logical manner for greater resiliency and higher performance, Bennett said. FlexVol also lets administrators set storage provisioning policies to allow volumes to grow on the fly according to how much space applications need.

Mike Forman, group director of North American IT at Cadence Design Systems Inc. in San Jose, said the flexible volumes will allow him to create more accurate chargeback models to his users. "You can assign a 500GB LUN [logical unit number] to a user, and if he's only using 50GB of the 500GB, you can take the other 450GB and give it to someone else. We've been asking for this for years," he said.

Because there is no preallocation of storage, utilization rates are far higher, Bennett said. Performance is almost doubled because the data is shared across disk array trays, allowing multiple engines to process I/O commands.

'Thin Provisioning'

Tony Asaro, an analyst at Enterprise Strategy Group in Milford, Mass., said NetApp's "thin provisioning" feature has yet to be offered by the other major storage suppliers.

Another new tool in Data ONTAP 7G, called FlexClone, performs snapshots or point-in-time replication of data sets for test, development and simulation scenarios. The snapshots, which require no disk space, can be manipulated and tested without affecting the initial data set.

NetApp also said last week that its NAS engine, the gFiler, can now serve up block-level data either through the Fibre Channel or Internet SCSI protocol. ISCSI allows block-level data transfers to occur over ubiquitous Ethernet.

NetApp said all of the new products are currently shipping. FlexVol is bundled with Data ONTAP at no extra charge. FlexClone is separately licensed from around $6,000. **50859**

Start-up's Java Tool Integrates Open-Source

BY STACY COWLEY

Start-up Gluecode Software Inc. last week brought out a new Java development platform that the company said ties together open-source components into an integrated system.

The new tool set, called Joe, includes pieces from The Apache Software Foundation's portfolio, including portal technology, the Geronimo application server, the Derby database (formerly Cloudscape) and the Agila BPM business process management engine. Joe is aimed at developers who are interested in using the open-source technology but are reluctant to tackle component-integration work. The Joe package includes support services and add-on features. Joe was built to marry the flexibility of Java with the usability of Microsoft Corp.'s development tools, said Winston Damarillo, CEO of El Segundo, Calif.-based Gluecode. He said he expects Joe to compete with Microsoft's .Net tool lineup.

Forrester Research Inc. analyst John Rymer said Joe should help companies that don't have the development expertise needed to pull together an open-source technology stack. Joe is most suitable for projects such as building Web applications, he said.

Technical support and access to Joe source code and updates are now available for an annual subscription fee starting at $3,500. **50877**

Cowley is a reporter for the IDG News Service.

Dell Unveils Second Blade Server

BY ROBERT McMILLAN

Two years after launching its first blade server, Dell Inc. last week brought out a follow-up product — the PowerEdge 1855 server, based on Intel Corp.'s Xeon EM64T processors.

The blades are designed to slide into a new 7U chassis designed by Dell. (IU equals 1.75-in. high.) The chassis can house as many as 10 of the dual-processor servers and can accommodate emerging 10-Gigabit Ethernet networking technology as well as the power requiremeots of Intel's next generatioo of Xeoo processors, said Bruce Kornfeld, director of worldwide enterprise marketing at Dell.

The extremely dense blade design lets systems share networking, power and cooling compooents. Users can squeeze up to 62% more servers into their data center racks than they could with Dell's rack-mounted IU PowerEdge 1850 server, he said.

Though his company hasn't yet installed Dell's new servers, Darrin Hyrup, director of operations at Mythic Entertainment Inc. in Fairfax, Va., said the 1855 appears to be a viable alternative to rack systems.

With little room for expansion in its data center, Mythic is looking to blades as a way to enhance performance. The company, creator of the online role-playing game Dark Age of Camelot, expects to standardize on a blade architecture by 2006.

While blades have always taken op less space than rack-mounted servers, the extreme density of the blade architecture has forced some blade designs to use cooler, less powerful processors than rack systems do. The 1855, however, uses the same processor as its IU rack counterpart. "We were waiting for the technology to mature," Hyrup said.

Mythic is also interested in evaluating a low-power version of the 1855, which is expected within a few mooths. Hyrup said he expects the new blade to have much lower power requirements than the 1855, which draws about 15% less power than the 1850.

One major concern for Dell customers is the fact that the new blade chassis doesn't yet support switching technology from Cisco Systems Inc., said John Enck, an analyst at Gartner Inc. Support for the Cisco technology is expected by early next year. Until then, the systems may be less appealing to enterprise customers, Enck said.

The PowerEdge 1855 chassis is priced from $2,999, and the blade servers from $1,699. Both are shipping now. 50661

McMillan is a reporter for the IDG News Service.

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Cordys Exec Touts Firm's Baan Roots

BY HEATHER HAVENSTEIN
ORLANDO

Cordys Inc., founded almost three years ago by Jan Baan and others from his core team at Baan Software (now part of SSA Global Technologies Inc.), recently began shipping its Web services platform. **Justin Anderson,** *the new president of the company's Americas group, soon to be based in Reston, Va., talked with* Computerworld *last week at the Gartner Application Integration and Web Services Summit here about Cordys' products and strategy.*

With Jan Baan as CEO, you have an IT veteran with a lot of background in ERP. What does that expertise bring to the table? The 22-year heritage there plays a key role in coming out with this next-generation tool. Wheo [Baan veterans] were developing ERP systems, they were dealing with security and scalability issues, and how do you make these businesses unique. We never were able to fulfill the visioo with ERP. Companies did big business process re-engineering but found they looked just like their competitors. As ERP was trying to grow, [vendors] would buy a CRM company or an advanced planning solutioo suite and try to bolt all those together. That compounded the problems. It is the same thing with an application platform suite.

Will your target market be companies trying to build composite applications? Yes. You would use our unified stack to create composite applications in a services-oriented architecture, so [that means] basically exposing all the disparate legacy systems instead of ripping and replacing all those to enable the visioo of the CEO or CIO. [Our platform] makes the ERP systems' application infrastructure so there are reusable componeots, and we can start with business processes to really fulfill making companies unique.

How does your technology differ from integration software? We're open-standards-based, and we have an XML application server and XML cootainers across that whole stack that we built from the bottom up. It leads to lower cost of ownership.

How does your technology support enterprise efforts to go beyond using Web services for internal integration by building composite applications? We have a component gallery — prebuilt building blocks — to help you start that. For example, we have B to B Express, which helps companies deal with their trading partners, customers and suppliers to build those composite applications. **50892**

Supercomputers Vital for Competitiveness, Say Users

BY TODD R. WEISS
PITTSBURGH

Corporate America must leverage government investments in powerful supercomputers so the technology can economically find its way into the private sector.

U.S. industry needs affordable access to supercomputer systems, which generally cost $10 million or significantly more, in order to better compete globally, concluded a panel on global leadership at the SC2004 Supercomputing Conference here this month. The panel included IT executives from General Motors Corp. and animation company PDI/DreamWorks, who explained how supercomputers have given their companies an edge in their respective industries.

To get the better of competitors in other countries, U.S. businesses need access to more powerful hardware such as supercomputers, said moderator David E. Shaw, chairman of David E. Shaw & Co., a New York-based investment and technology development firm. To keep costs reasonable, companies need to leverage government investments in supercomputers, he said.

Government agencies and business groups are currently looking at ways to amortize government technology investments over a larger group of potential users, Shaw said.

A recent survey by the Council on Competitiveness also found that the private sector lacks trained IT professionals to run such technologies, said Suzy Tichenor, director of the high-performance computing program at the Washington-based nonprofit business advocacy group. Companies could utilize trained government personnel under a public/private partnership.

Business Benefits

The benefits of supercomputers are real, said panelist Sharan Kalwani, manager of high-performance computing infrastructure at GM.

Designing new vehicles and tooling up factories to build them is incredibly expensive and took up to 60 months to complete in the early 1990s, he said. Powerful supercomputers now compress and overlap multiple schedules for design, tooling, research, safety testing and manufacturing, cutting the the process to 18 months, Kalwani said. One area seeing the most effect has been in replacing crash-test cars.

Andy Hendrickson, head of animation technology at PDI/DreamWorks, a Redwood City, Calif.-based unit of DreamWorks LLC, said supercomputers have revolutionized the animation business by allowing complex mathematical calculations to be done more quickly, helping to create more lifelike animation and reducing labor costs. Since labor accounts for the lion's share of the cost of an animated film, the savings can be huge and could slow the trend of sending animation jobs offshore, Hendrickson said. 50885

Windows to Skip Itanium for Supercomputing

MICROSOFT CORP. will support only x86 processors with 64-bit extensions when it releases a version of Windows Server 2003 for high-performance computing (HPC) applications next year, putting off support for Intel Corp.'s Itanium 2 chip to a still-undefined date.

The HPC market is currently dominated by Unix and Linux operating systems. Microsoft is looking to break into the market but feels that Itanium 2-based hardware is too expensive and too powerful for the small clusters that it expects users to build around Windows Server 2003.

"When you look at our target market – the departmental clusters – Itanium 2 is a bit outside the reach [of users] in terms of budget and in terms of needed computing power," said Greg Rankich, a senior product manager at Microsoft.

Microsoft this month updated its rollout plans for the Windows Server 2003 Compute Cluster Edition, which previously was called the HPC Edition. A first beta release of the software was due this year but has slipped to March or April, Rankich said. The commercial release is still slated for late 2005. Support for Itanium 2 will be added in the second release of the operating system, Rankich said, but a shipment date for it hasn't yet been set.

Officials at Hewlett-Packard Co. understand that Microsoft chose to first support x86 processors because they have higher sales volumes than Itanium 2, said Ed Turkel, manager of product marketing at HP's HPC division. But HP, which uses Itanium 2 in its Integrity line of servers, is pushing Microsoft to add support for the 64-bit chip "as quickly as possible," he said.

Microsoft is clearly aiming for the sweet spot in the HPC market in terms of volume, said Nathan Brookwood, an analyst at Insight 64 in Saratoga, Calif. HPC is one part of the IT industry where Microsoft doesn't enjoy an installed-base advantage over its rivals, Brookwood noted. "Microsoft is going to have to fight tooth and nail for every HPC sale it gets."

– *Joris Evers, IDG News Service*

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The latter is easier to demonstrate. While Burroughs, Digital, Wang, Cullinane and many other product companies vanished long ago, the same four services firms — IBM, Electronic Data Systems, Computer Sciences Corp. and Accenture (formerly Andersen Consulting) — have been the dominant players for as long as the IT services business has existed.

Powerful disruptive forces clearly have affected the hardware and software sides of our industry, but no such forces have affected the services sector, at least thus far.

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But can this extraordinary stability be maintained? Recently, I have been doing research to try to forecast the future of the IT organization, and I've increasingly been coming to the conclusion that change is finally on the way. There seem to be three main forces that could transform the way IT is used and managed.

Increased business control. As IT becomes more deeply embedded in a company's actual products and services, it's likely that many businesses will want to take more direct control over business-critical IT projects. It probably makes sense for businesses to own the applications they rely on, with shared infrastructure and horizontal applications becoming the primary concern of the IT organization.

Alternative sourcing. Certainly, outsourcing remains an alternative for managing an organization's IT infrastructure, and the increasing marketplace focus on grid and utility computing suggests that the provision of capacity by third parties will rise in popularity. But such capacity services are now largely a commodity business, and both customers and outsourcing suppliers are struggling to find more dynamic, value-creating models.

Public infrastructure. In an abstract sense, IT organizations and IT services companies are both in competition with the Internet. This ever more capable public infrastructure will prove to be an increasingly attractive alternative to both in-house and outsourced IT solutions in areas such as collaboration, mobility and ASP-style services.

These three forces clearly have the potential to reshape the roles of both IT organizations and their service providers. But since there is so much IT work to do, it's not a question of whether either group will go away. Instead, it's likely that both sectors could start to change as dramatically as other parts of the IT industry have.

But while this logic seems sound, the real forecasting challenge is getting the timing right. Will this restructuring take seven or 17 years to play itself out? Despite all the changes our industry has seen, individual transitions are often a lot slower than they appear in retrospect. My guess is that by the end of this decade, we will look back and see that fundamental changes have indeed taken hold for IT organizations and services providers alike. **50696**

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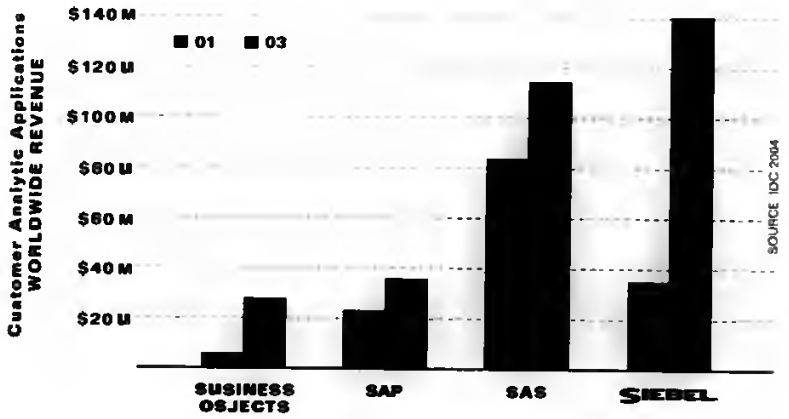

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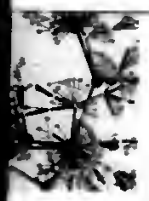

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ISABELLE ARSENAULT/ISTOCKPHOTO.COM

STANDARDS:
High-Stakes GAME

Money and politics are playing a bigger role in the standards-setting process. By Robert L. Mitchell

MORE THAN EVER, businesses rely on IT products and services built around standards. But that demand, and the evolution of the industry, is changing how standards are created — and who creates them. The old image of a group of engineers working together to find the best technology to solve a problem is giving way to new realities.

As the market for IT products and services has grown, the stakes for vendors and users have increased. An emerging technology such as ultrawideband (UWB) may open up a market worth $1 billion or more. With so much at stake, participation in standards groups has swelled, and vendors have pushed harder to have their technologies adopted as standard. That

has made it difficult to reach consensus in some cases and created deadlock in others. And increasingly, vendors are trying to generate revenue by licensing intellectual property rights on the technologies they advocate as standards, rather than donating them for the common good.

"You now have compromises that are not just mathematical compromises or technical compromises but have major marketing compromises behind them," says Jim Carlo, president of the IEEE Standards Association.

Meanwhile, the evolution of more sophisticated systems has increased costs and worked against interoperability. At MasterCard International Inc., the challenge lies in getting industry-standard equipment to interoperate when inserted into complex systems such as its storage-area network (SAN).

"There are issues as you drill down into the management and interoperability of complex environments," says Jim Hull, vice president of engineering services at the Purchase, N.Y.-based financial services company. "You need to ask vendors whether they interoperate and at what level."

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dividends for business users. "What's better is the testing and verification. The companies are taking it upon themselves to ensure that their products work as advertised and are expanding their test labs and their testing," says Hull.

Successful industry standards are issued by authoritative organizations and are widely accepted by the market. "A standard is an indication that you are buying a technology that has proved itself," says Alan Bryden, secretary general of the International Standards Organizatioo (ISO). And while standards in and of themselves don't ensure interoperability, they are a necessary precondition.

Opportunity Beckons

To Hull, a successful standard is one that lets him find a second source and receive competitive pricing for storage networking equipment that will plug and play with his SAN. "Because I approach it from a standards perspective, my interoperability issues go way down," he says.

For vendors, standardization results in the opportunity of a broader market and the expense of increased competition. "The companies involved need to decide when it is to their advantage to enlarge the pie even though they may lose market share," says Carlo.

Authoritative organizations used to include mainly those standards development groups accredited by the American National Standards Institute, which represents the U.S. in the ISO and in other national standards bodies. Now many specifications come from hundreds of organizations, including vendor alliances, consortia and other industry groups.

Such groups have proliferated in recent years. Organizations pop up when existing standards bodies are seen as being too slow to respond, lacking expertise or disinterested in an emerging technology. In some situations, vendors strike out on their own, believing that their technologies won't get a fair hearing if they go to an established group.

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"If you bring it to a standards organizatioo too soon, it will not have a chance to evolve on its own merits," says Tim Howes, Opsware's chief technology officer and chairman of the DCML Framework Technical Committee. But DCML.org was ignored by major data center software vendors.

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Prior to founding the W3C, you first took HTML to the IETF. Why didn't it work out? I did start by taking HTML to the IETF, as I had been involved with the IETF for Internet protocols. That didn't work out largely because the people with markup experience were a different set: They joined the later W3C HTML Working Group when it was formed, which was very successful in bringing the fragmented HTML versions back to a single standard.

Why are there so many consortia and vendor groups promoting their own standards today? Recognizing that standards are now what customers demand, we see more of these marketing initiatives launched under the name of "standard." And of course, it makes sense that vendors might want to ensure that they can exert as much control as possible over the development of a standard – they're going to have to make products that conform. If a vendor group can control both the technical development and the marketing, then it's more appealing to the vendor – but not necessarily to the customer.

If you look at the rate of creation of new fora of the type which are formed by a few controlling founders, then in fact this is not new – it has been happening for a long time. Many of these are being formed as a marketing exercise, to build up some brand recognition. I don't think there is anything wrong with that, per se, except when it gets labeled a standard.

How do you think the world has changed in terms of what it takes to create a standard? A lot is at stake in terms of applications, both commercial and noncommercial. We've seen what happens when people and organizations sacrifice interoperability for speed.

There are also more people who are interested in participating in the production of a standard and more interested in using the end result. There is the continued desire to ensure that what gets built today works with what was implemented some time ago.

Given the importance of projects such the Semantic Web, are you working with other standards organizations to get its

elements more broadly supported? There has been relevant work done in the IEEE, though it doesn't come with the same connection to Web architecture – it doesn't use [Uniform Resource Identifiers] to identify everything, for example. The work on conceptual graphs, which is closer to Semantic Web work, went from the IEEE to ISO. However, the core standards for the Semantic Web, a growing stack based on the Resource Description Framework [RDF] and the Web Ontology Language, were developed at W3C and are W3C recommendations.

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"DCML may have been an attempt at a standard, but it certainly wasn't open," says Alan Ganek, vice president of autonomic computing at IBM. But DCMLorg recently became part of the Organization for the Advancemeot of Structured Information Standards (OASIS), and Ganek says IBM may take a second look.

It's not uncommon for large players to join a standards effort late, says Patrick Gannon, president and CEO of OASIS. "It's only when there's a clear indication from the market that they come on board," be notes.

Harald Alvestrand, chairman of the Internet Engineering Task Force, says what's often missing in standards organizations is significant user participation. In most cases, IETF standards efforts are driven by vendors.

"The standards process would deliver better standards if users were more active within it. [Users] inform the discussion in ways that other people can't," Alvestrand says.

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One subject on which customers continue to speak loudly is interoperability, and many industry associations are doing both compliance and interoperability testing.

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But that hasn't stopped other vendors from trying. For example, the Bluetooth Special Interest Group certifies compliant products, as does the Wi-Fi Alliance. The latter has tested more than 1,500 products over the past four years.

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- Robert L. Mitchell

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Even when vendors are interested in developing a standard, they don't always agree on the details. The Institute of Electrical and Electronics Engineers Inc.'s study group for the UWB specification for wireless communications remains deadlocked after two years. Neither of two competing camps, led by Intel Corp. and Motorola Inc.'s Freescale Semiconductor Inc., has the votes needed to move forward. "The engineers are not listening to each other anymore," laments Martin Rofheart, director of UWB operations at Freescale.

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WHO CAN YOU TRUST?

Have an open membership and open processes

Follow a consensus or ballot driven approval process

Are committed to maintaining and updating existing standards over time

Are widely recognized and respected in the industry

Have a track record of successful standards accepted by the market

May be recognized or accredited by ANSI in the U.S. and by international bodies such as the ISO.

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HELP KEEPS TRANSIT SYSTEM MOVING

New help desk software eases the burden on Pittsburgh port authority service reps and ensures user access to critical applications. BY LINDA ROSENCRANCE

UNTIL LAST YEAR, the Pittsburgh-based Port Authority of Allegheny County had no centralized system for handling help desk calls from its 872 users.

The agency's 22 support representatives were overwhelmed with the 150 to 200 help desk calls they were receiving each day. The port authority has 3,100 employees and provides bus and light rail service to 68 million riders annually in Pittsburgh, Allegheny County and parts of three other counties.

The problem was that the authority's homegrown Microsoft Access Help Desk database management system couldn't handle all the calls and help requests.

CASE STUDY

"Approximately 55% of the help desk calls are for our PeopleSoft ERP application — both financials and HR/payroll, e-mail — which is Microsoft Outlook, a vertical market product for dispatching and scheduling, and Microsoft Office," says Wayne Hammond, the port authority's director of IT administration. The majority of the other calls are related to hardware, security and telecommunications, he adds.

The agency needed a way to streamline the requests and track each support staff member's trouble tickets, says Steve Dudzik, a port authority support representative. "The only way our support reps used to have access to the tickets was when the help desk call was created, and our help desk manager would e-mail that ticket to them," he says. "There was no way to check on their current status."

After looking at a few help desk products, the port authority selected HelpStar technology from Help Desk Technology International Corp. in Crestview, Fla. The main reason was money, according to Hammond. He had only about $6,000 to spend.

"We felt we needed to get a [commercial off-the-shelf] product, rather than working to develop something in-house," he says. "We were working with a limited budget, so we had to find something we felt would work — that had a Web interface. And we were hoping it would be open, like in a SQL platform that we could create reports from. And we wanted to be able to have everybody access this system."

The other packages he looked at did all the right things, but the port authority couldn't afford them, so it chose the HelpStar software, which was priced at about $4,200, Hammond says.

With HelpStar, which runs on a Microsoft SQL Server 2000 database, a new service request is created for each new job, call or action undertaken by the help desk, says Gemma Young, product manager at HelpStar.

End users can submit service requests from their Windows clients, over the Web or via e-mail. Those requests are converted into help desk tickets, and remote support staffers can open and update requests via the Web interface, Young says.

"HelpStar allows support reps to access their tickets from anywhere on the network by going through the Web interface, and it reduces the amount of e-mails we have to send out," says Hammond. "We also liked that through the Web interface, users can enter their own tickets and don't need to call the help desk anymore."

When a support representative is assigned a trouble ticket, a notification comes up on his screen, Dudzik says.

"The system checks for these notifications about every five minutes for us, but that's customizable," he says.

Automatic Routing

Once a request is made, it's automatically forwarded to the dispatch area. From there, a dispatcher, usually a support rep, will assign a priority to the request and direct it to the relevant queue, a temporary holding area for requests grouped by the particular skill required to solve them, Young says.

The requests are then sent to the most-qualified support staffers, who are prompted to work on the highest-priority requests that have been waiting the longest time, she says.

"The end users also have the ability to use the Web interface to check for solutions to their problems via the knowledge database — a database of common problems and their solutions," says Young. "Users can also check on the status of any existing requests they have logged with the help desk by e-mail or a Web interface."

And if one staff member's workload is reduced at a particular time, he can view the other outstanding tickets and assign one to himself, says Hammond.

The port authority has 10 locations, and if a support rep is handling a problem at a branch office, he can check the other tickets to see if anything else needs to be done there before going back to the central office. "Before, there was no way of knowing without making a phone call," says Hammond.

The port authority also keeps an account of every phase of the ticket, so support reps can see the whole history of the ticket from when the help desk worker or the user entered it.

The HelpStar client software was installed on the 22 support reps' desktop PCs, which are Dell GX-270S machines with 2.6-GHz Pentium 4 processors, 512MB of RAM and 40GB hard drives running Windows 2000, Service Pack 4. The server package runs on a Dell PowerEdge 2400 server with dual 66-MHz Pentium III processors with 1GB hard drives running Windows 2000 Server, Service Pack 3, Hammond says.

Installation of the HelpStar software took six to eight hours and was "trouble-free," Hammond says. 50349

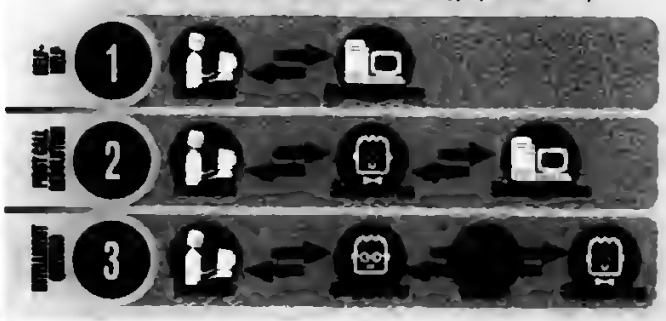
THREE-PRONGED RESPONSE TO DISTRESS CALLS

HelpStar software manages help desk inquiries at three levels.

1) End users can use the software for self-service resolution of problems.

2) Users can contact a support rep to sort through options and find the best solution.

3) If all help desk reps are busy, users go through a dispatcher who uses HelpStar to direct them to the queue for the most appropriate service rep.



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Pointillist Protection

A Georges Seurat approach to vulnerabilities. By Matt Hamblen

FUTURE WATCH

CARNEGIE MELLON UNIVERSITY is researching some of the biggest challenges in computer security, data availability and systems reliability through a year-old interdisciplinary program known as CyLab.

Funded with federal dollars and contributions from 40 private companies, CyLab brings together graduate students and 30 professors, mostly in computer sciences, to work in teams on a wide range of research areas.

For example, in September, Pittsburgh-based Carnegie Mellon won a $6.4 million grant from the National Science Foundation for an initiative called Security Through Interaction Modeling (STIM), which studies cumplex interactions between people, the computers they use and attacks from the outside. STIM will explore means of improving computer defenses by incorporating the models' behaviors into the defenses themselves.

Another CyLab project takes the name of the French impressionist painter Georges Seurat, who painted vast canvasses with many tiny dabs, or "points," of paint, a process dubbed puintillism. The Seurat team at CyLab is developing methods to monitor anomalous behavior that may be induced by buffer overloads and other glitches. The Seurat technique compares a precomputed profile of how a system should be performing to the combination of all the application interactions with the operating system. "So it looks at a profile of what this system should be doing and says maybe this thing has been corrupted," explains Mike Reiter, technical director of CyLab and a professor of computer engineering and science. "It can track accesses and changes across many machines all at once or in a short time period."

The Seurat project is so named because there are many layers, points or places where one might measure what is going on in a system in order tu see evidence of an attack, much the same way the 19th century painter discovered that what we see comprises many points of color and light.

The Seurat technique is a broad-brush approach to security, and indeed, the overall scope of CyLab's $10 million annual research mission is broad, says Pradeep Khosla, dean of the Carnegie Mellun College of Engineering and co-director uf CyLab.

"We want a world where we can push measurable, sustainable, secure, trustworthy and available data," explains Khosla. He says CyLab will attempt to help reduce the number of bugs in software, for example.

CyLab is developing network defense mechanisms for virus and worm attacks. Carnegie Mellon researcher Chenxi Wang says the idea is to detect an infection early and have the network react to it in real tima to mitigate damage. The secret is lo quickly identify those few critical nodes, shown here in red, that most aid the spread of malicious code so that they can be "immunized or patched," Wang says. Tha work is supported by a National Sciance Foundation grant of $1.5 million and is being conducted by Carnegie Mellon and industry partners Symantec Corp. and Akamai Technologies Inc. Researchers are also looking at network vulnerabilities in a separata affort called Ihe Suerat Project.

Khosla estimates that for every dollar spent on computer hardware and software, it takes $6 to $8 in personnel costs to maintain it. For that reason, vulnerability analysis is part of the CyLab program as well as malicious code detection.

But even more basic, several projects at CyLab are devoted to creating self-healing systems that can survive malicious attacks, Khosla says. "We know attacks exist, so you can either build a system that survives the attack or find a way to stop the attack," Khosla says. "But trying to find a way to stop attacks is akin to saying, 'I'll kill all the bacteria and viruses out there.' Instead, we are going to find a way tu live with worms and attacks with self-healing."

CyLab's immediate work on self-healing is a project called Self * Storage System, which researchers are about to demonstrate to the U.S. Army and will show publicly in six months or so. The idea is that there is no single point of failure in a system, especially storage, so if a piece of information is corrupted, the system can quickly determine that and automatically set itself back to its original state. The system survives the attack without actually finding a way to prevent it, Khosla explains.

Reiter says Self * Sturage is also about improving management of large-scale storage systems in a process some call autonomic computing.

Cell Phone Remote Control

Aoother vision at CyLab is to use smart phones as ubiquitous access control devices. It is an idea that mobile phone companies have already implemeoted, but CyLab is working on new approaches to making that vision very scalable.

As a hypothetical example, Reiter cites the intrepid business traveler flying halfway around the world and using his cell phone as a key to open his hotel room door. The idea goes far beyond promoting a single standard and instead involves what Reiter calls a "flexible access-control network which allows new policies tu be introduced into a system to permit devices tu work."

The traveler would have his credentials transferred to the hotel from his phone by Bluetooth or ultrawideband technology, with a hotel room digital key transferred back to reside on the phone.

There would be no problem if the phone was stolen, because it would autheoticate the user by PIN or thumbprint before revealing the key. Using its WAN capabilities, the phone would request permissiun from a remote server, perhaps at the traveler's place of employment, which wouldn't know the key but could authenticate the traveler based on the PIN or thumbprint. Once clearance was granted, the phone would be allowed to complete the computation uf the cryptographic key to allow the traveler to get some sleep.

Reiter says CyLab is starting to demonstrate this capability and will move forward with the opening this winter of the Collaborative Innovation Center, a facility in whicb researchers will be able to control building functions using smart phones. **50615**

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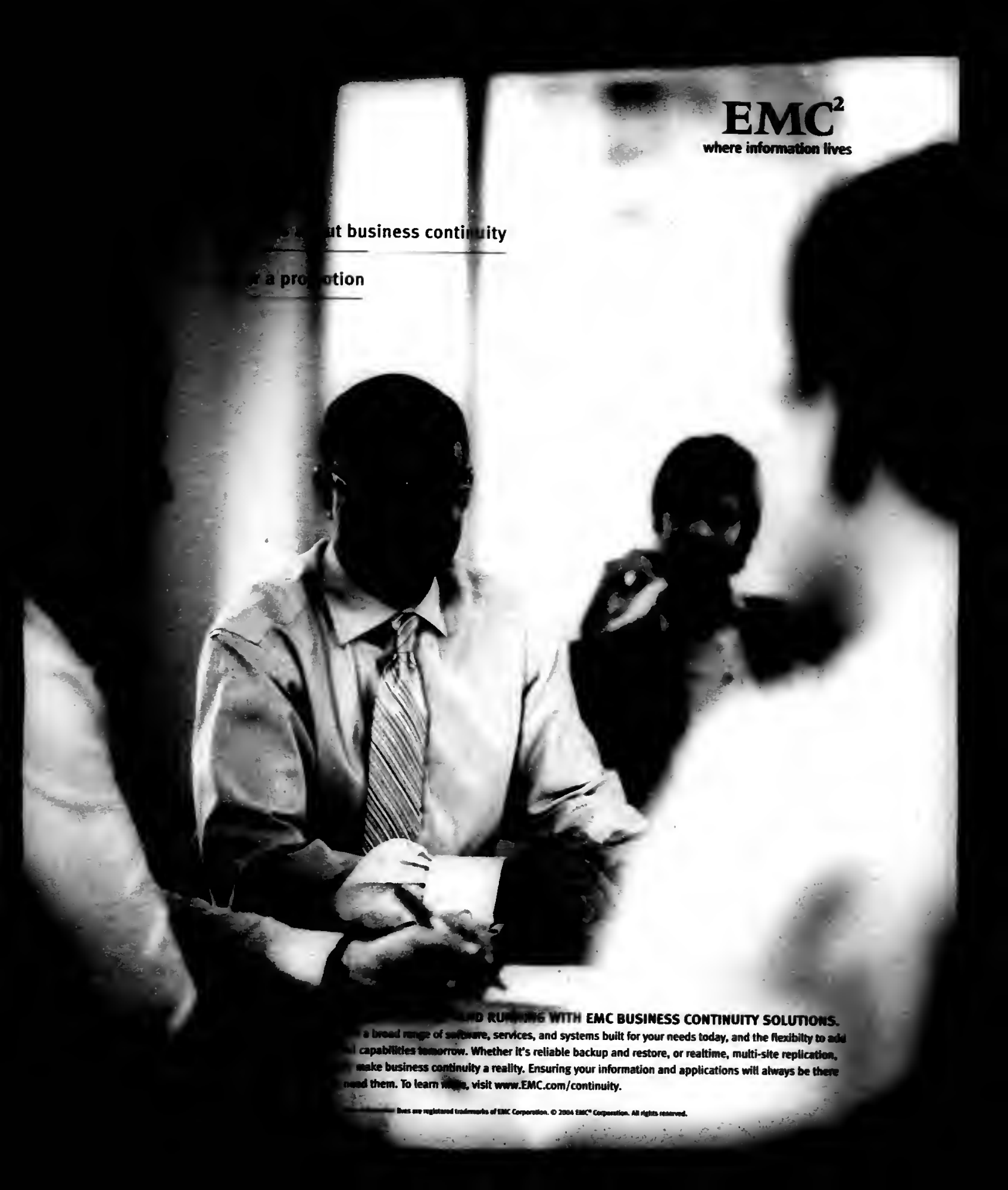
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Network Visibility Goal Gets Trimmed

Our security manager asks the impossible of her team before learning what can be done in the real world. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

THE TEAM gathered in the security lab for our weekly meeting. At the top of the agenda was distributed intrusion detection. The junior-level security engineer glanced toward a whiteboard that displayed his work of art — numerous lines drawn in different colors depicting the complicated layout nf our network. The black lines represented copper links, the red lines fiber, the black boxes routers and switches, and the blue boxes network taps and Snort sensors.

Meanwhile, the senior security architect distributed current network diagrams neatly done in Visio network diagramming software. Everyone was well prepared.

I noticed, however, that the team members were on edge. They were feeling drained and discouraged after dealing with Microsoft's flurry nf security patches in Octnber, discovering a security breach that originated from a remote laptop, managing participation in more than 40 IT and development projects and hearing rumors that the 2005 budget was being slashed to bare bones.

I took a deep breath, smiled my best we're-all-in-this-together smile and turned to the youngest member nf our team. "Whatcha got?" I asked him.

He explained that his first recommendation for how to gain better visibility nn the network was to buy port aggregators. He had read reviews and thought the idea sounded good. But after working elosely with network engineers to better understand the network, the team member had found that the port aggregators wouldn't work for a variety of reasons. So, instead, he had come up with a design that combined port spanning with network taps. I reviewed his design and nodded. This kid is smart, I thought to myself, and this is sure going tn cost a lot less money than the original plan of purchasing port aggregators at $950 a pop.

The goal, in my mind, was to be able tn monitor the LAN/WAN environment for suspieious traffic, receive alerts via SMTP (preferably e-mail sent to our BlackBerry devices), respond to events in as elose to real time as possible and report on that activity in weekly and monthly summaries to upper management. I didn't think that was too much to ask.

The senior security architect turned to me and said, "It would be belpful for us if you would be very explicit about what kind of results you're looking for."

As usual, I stuck my foot all the way down my throat. I said, "I want to see 100% of the traffie on 100% of this network and every network attached to it that we have security responsibility fnr." He smiled gently and said, "That's impossible. And by the way, nobody does that."

> As usual, I stuck my foot all the way down my throat.

I learned early in my career that if you want to manage people well, you have to let gn of your ego, hire people a lot smarter than you and let them do their jobs. My job is to understand enough about security to make good business decisions and to ensure that my team members have what they need to do their jobs. So when presented with this bit nf insight from the security architect, I laughed, and the team started to loosen up.

Tell Me Everything

"What I know," I said, "is that we do not have the level of visibility that we need. What I know is that we cannot continue to rely on span ports. What I know is that our network could be owned [that's the haeker term for obtaining undetected full privileges on a private network] right now, and we have to do something. You're the experts. Tell me how this is done; tell me if we can do it and what you need from me to get it done."

At this point, the entire team started joking about how the network architecture is horrible. I thanked our junior engineer and asked him to put his designs into Visio, meet with the network engineers and the senior network architect and gain buy-in for his designs. Without the cooperation of the network guys, we weren't going to be able to sell the idea of in-line network devices, no matter what the cost savings.

I had to put together a project plan for this, present it to management, get it on the project management office queue and juggle the budget to make sure we could move forward quickly. My part is boring but essential. The company was scrutinizing every dollar, and I couldn't let this project fall by the wayside.

In an effort to be explicit about my expectations, I asked the senior security architect to explain the nuts and bolts of security monitoring to the team. I wanted to understand what we eould do withnut seeing all the traffic all the time.

"What we need to be able to do," he explained, "is to collect data that describes the network environment to the highest levels possible. We will be constrained by hardware and its ability to eollect the data. Therefore, we will have tn focus on sampling the data at key points on nur network. We will not be able to collect every packet that traverses the network and analyze it. Even if we did collect gigabytes of data from eacb key point, we would be faced with eorrelating and analyzing vast amounts of data, and we just don't have the resources to do that."

We had been in the security lab for two hours discussing intrusinn detection, and it was now lunchtime. Engineers aren't at their best when they're bungry. "OK, guys, let's break," I said. "The next step is to find a way to correlate and analyze the data now that the design for collecting it has been completed. I'd like to have some choices to review next week. Good work."

I was humbled by my inability to understand all the technical details, but I was encouraged that I had hired people with top-notch skills. I was also excited that we were finally making some progress at the core level toward finding out what was really going on in the network.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: QuickLink a1590

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

E-commerce Fraud On the Rise in '04

In its ninth annual e-commerce fraud survey, CyberSource Corp. forecast that businesses will lose $2.6 billion to online fraud in 2004, a 37% increase over $1.9 billion last year. In addition, merchants are rejecting 20% more orders than they did last year because of suspicion of fraud, said CyberSource, which specializes in electronic payment and risk management services for retailers. Retailers have had some success finding losers. This year, fraudulent orders account for 1.8% of online sales, which is statistically level with 2003's 1.7%, according to CyberSource. The $700 million increase in fraud losses is due to e-commerce growth. The 340 merchants surveyed said they expect their e-commerce revenues to increase by 30% in 2005.

Net Monitor Now Works on Firefox

22 Security Corp. announced that it has certified its 22 NetMon product for use with the Mozilla Foundation's new Firefox 1.0 browser. Users of 22 NetMon Version 1.1 and later releases can now access the software's monitoring, administration and reporting capabilities with an interface delivered via Firefox, said Wellesley, Mass.-based 22.

SSO at Last

RSA Security Inc. in Bedford, Mass., announced the availability of its RSA Sign-On Manager, which it said will simplify password management and make it easier to log into multiple applications. Sign-On Manager was originally due in the third quarter but was delayed so the company could make improvements suggested by test customers, said Phil Pokoloss, director of product management at RSA. Sign-On Manager connects RSA's SecurID Passcode authentication system with single sign-on technology licensed from Passlogix Inc.

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BRIEFS

Adobe Announces Acrobat Upgrade

■ Adobe Systems Inc. in San Jose announced Acrobat 7. The new version can create PDF images of Outlook e-mail messages and folders, loads and runs faster, supports 3-D images and includes an organizer feature for combining PDF files into compound documents, according to the company. The Professional edition now includes Adobe Designer forms software. It also supports GeoTrust Inc.'s digital certificates and can create encrypted, password-protected PDF documents that users with the free Adobe Reader can open. Acrobat Standard is $299; Acrobat Professional is $449. The product will ship in January.

Epiphany Unveils Analytical Packs

■ Customer relationship management software maker Epiphany Inc. in San Mateo, Calif., last week rolled out analytical software that it said can help companies better deal with customers and drive profitability. The two new products in the Advisor line are aimed at the communications and retail finance industries. The packages ship this week with a typical installation priced at about $250,000, according to the company.

Symantec Updates Remote Software

■ Symantec Corp. in Cupertino, Calif., last week announced pcAnywhere 11.5, with support for a broader array of devices and more security features. Additions include the ability for IT managers to remotely control devices from any machine running Linux, Windows, Pocket PC and Pocket PC Phone, the company said. Security additions include 13 ways to authenticate users and use of the new Advanced Encryption Standard. A retail version will be available next month for $199.95.

TOMMY PETERSON

Users Should Enlist In Standards Wars

WHENEVER I think about what we vaguely refer to as the "standards process," I'm reminded of an event I attended in the summer of 2003 at Burton Group's Catalyst conference. It was billed enthusiastically in preconference publicity as "the first public demonstration" of SPML, the Service Provisioning Markup Language standard developed by OASIS, the Organization for the Advancement of Structured Information Standards. The demonstration was part of the run-up to a vote on the specification's acceptance by the full membership of OASIS, whose stated mission is to develop e-business technical standards.

TOMMY PETERSON is Computerworld's Technology editor. Contact her at tommy_peterson@computerworld.com.

The venue for this milestone was a nondescript meeting room hidden in the subterranean recesses of a San Francisco hotel. The room was mostly filled with smart, articulate engineers and their marketing department colleagues from each of the OASIS member vendors that had been part of the working group that produced the standard.

They stood in groups, each clumped in front of an island of systems running their company's software. From their stations, the groups eagerly engaged the public — in this case, journalists and a few curious conference attendees — and performed the delicate task of touting the superior qualities of their own products while talking up the importance of the standard that would make all of the products work together. The vendors represented in the room were big and small. Some were direct competitors; others were part of business partnerships.

Then the demonstration started. The critical moment, when an imaginary user's access rights and resource information were provisioned across all the applications running in the room, went off without a hitch. Proud exclamations erupted from the participating groups as the example user appeared in each vendor's application.

Unfortunately, it was difficult to make the imaginative leap from this highly controlled demonstration to the much more unpredictable environment of any large business's IT systems. The exercise was interesting — even impressive — yet I felt as though I'd watched an elaborate version of a high school science fair project.

This memory persists not because I doubt the importance of SPML in particular or technical standards in general. It's because that demonstration reveals the absurdities and complexities in the standards development process. We often speak of standards as though they are the result of a logical, if painfully slow, exercise that promises to rationalize some technology sector or another. For wireless LANs, it's the need to get basic communications standards in place. For Web services, the idea is to build a common stack of specifications so that service-oriented architectures can take over the corporate IT world.

In actuality, standards emerge both because of and despite a convoluted web of ideas, relationships and business needs. They reflect the interplay of market forces at least as accurately as they do the pure pursuit of elegant engineering solutions to technical problems. As Robert L. Mitchell points out in the feature "Standards: High-Stakes Game" (see page 25), the notion of technical standards being hammered out by a group of high-minded engineers is outdated — if it ever was based in reality.

The development of standards stirs contention because the process represents the friction point where innovation rubs up against commoditization. The impulse to protect intellectual property has to be balanced against the need to operate in an astoundingly diverse technology landscape. And don't forget that the winners of what are ostensibly wars of ideas get a much larger slice of million-dollar — or even billion-dollar — markets than do the losers. Given all the interests in play, is it any wonder that progress toward consensus on any specification is excruciatingly slow? The process isn't going to get any faster as the number of players continues to increase, and as each organization and vendor has more and more riding on the acceptance of its own ideas.

User participation in standards creation lags behind that of vendors, but corporate IT has at least as much at stake: Interoperability translates directly into money and time saved. To users, standards imply interoperability and the ability to comparison-shop to fill their technology needs while controlling costs. Standards also offer time savings in implementation after buying choices are made.

The standards development process also guarantees users plenty of frustration, as they sort through the welter of standards organizations and wonder what compliance means in the current fractured landscape. But user participation is key to achieving better standards and more efficient ways to create them. It's time to enlist in the standards wars. **50863**

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The development of standards stirs contention because the process represents the frictioo point where innovation rubs up against commoditization. The impulse to protect intellectual property has to be balanced against the need to operate in an astoundingly diverse technology landscape. And don't forget that the winners of what are ostensibly wars of ideas get a much larger slice of million-dollar — or even billion-dollar — markets than do the losers. Given all the interests in play, is it any wonder that progress toward consensus on any specification is excruciatingly slow? The process isn't going to get any faster as the number of players continues to increase, and as each organization and vendor has more and more riding oo the acceptance of its own ideas.

User participation in standards creation lags behind that of vendors, but corporate IT has at least as much at stake: Interoperability translates directly into money and time saved. To users, standards imply interoperability and the ability to comparison-shop to fill their technology needs while controlling costs. Standards also offer time savings in implementation after buying choices are made.

The standards development process also guarantees users plenty of frustration, as they sort through the welter of standards organizations and wonder what compliance means in the current fractured landscape. But user participation is key to achieving better standards and more efficient ways to create them. It's time to enlist in the standards wars.

50063

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Q&A
After the Deal
The deal of the century may lead to the implementation from hell, says Danny Ertel. Forget about deal-making and negotiate with implementation in mind, he advises. **Page 42**

Career Watch
The priciest foreign postings; who's leaving home and who's not; the IT workweek — it just *seems* like forever; and middle managers' view of a brighter future. **Page 43**

OPINION
A Convergence of Roles
To whom should the chief security officer report? That's the wrong question, says Norbert Kubilus. The right question is, Who should the CSO be? **Page 44**

MICHAEL MILLER

Linux UNCHAINED

Linux use is growing faster than the talent pool needed to support it. Here's how IT managers see the problem and what they're doing about it. **BY MARY K. PRATT**

CUSTOMERS OF GAF3 SOLUTIONS tell the technology services provider that they want to use Linux because they hear it's reliable, robust and relatively inexpensive. But a customer recently balked at the one-month delay to install a Linux server. Why such a long wait? GAF3's Linux expert was overextended, says George A. Fitch III, president and CEO of the Dover, N.H.-based company.

High demand has Fitch wondering if he should charge extra for Linux-related work. If he does, he wouldn't be alone.

Linux is gaining ground so quickly that some companies are having a hard time finding enough people to handle Linux-related work. And those they do find charge a premium, according to The Yankee Group, a market research firm in Boston. Skilled Linux administrators in major metropolitan markets command 20% to 30% salary premiums over their Unix and Windows counterparts — a fact that could diminish the cost savings that many companies bank on when they switch to Linux.

"It's really hard to find good, qualified help that doesn't charge you so much," says Laura DiDio, an analyst at Yankee Group.

Not all IT managers concur with that assessment, but they do agree that the growth of Linux requires a retooling of tech workers. They can't throw their Windows people into Linux projects without additional training, and though Unix staffers can pick up Linux more quickly, even they need time to get up to speed.

The Goods

Linux experts and enthusiasts cite a litany of skills that companies need for Linux systems work. Experience with programming and documentation is key. The ability to edit files and modify source code is important, too. Management experience is another plus.

Those skills aren't overly difficult to find, says Michael J. Ciaraldi, a computer science professor at Worcester Polytechnic Institute in Massachusetts. But other skills — namely expertise in networking and graphics — aren't so easy to locate.

"Another skill in Linux is you have to be willing to ask other people for help," Ciaraldi adds. For those who do seek help, there are Web sites and user groups that share information on how to use and modify Linux.

DiDio compares the skills needed for Linux today

to those sought for network administrators 15 or 20 years ago. "What you're basically looking for is that eclectic network administrator or software developer from circa 1988 — someone who knows lots of different things," she says.

While some say the lack of personnel with Linux expertise affects the rate at which companies adopt the open-source system, others say IT departments are finding the skills they need without much extra effort or additional pay.

"If you have someone who has experience with other operating systems, I don't think it's all that difficult switching over to Linux," Ciaraldi says. "Conceptually, the commands are the same, the structure is similar. It's just learning what the exact commands are to accomplishing various tasks."

Tom Pratt, IT manager at Coastal Transportation Inc., a shipping company in Seattle, agrees. He oversees a mixed environment that includes seven Linux servers and two Linux desktops. Pratt says he had no problem learning Linux, and he wouldn't expect to encounter any problems finding skilled help if necessary. A Unix administrator could easily evolve into a Linux administrator with self-directed training, Pratt says. "If you can read, that's the primary skill you need," he adds.

Not So Fast

Not all companies are comfortable moving ahead with Linux without skilled workers, however. Ciaraldi remembers one New Jersey company, which was working with Worcester Polytech students, that decided against a Linux server when it realized it didn't have in-house Linux expertise.

And for companies that like flexible IT staffs, Linux can present a problem. "The hardest thing I'm finding is someone who is very good in Linux and can support Windows," says Dan Agronow, vice president of technology at The Weather Channel Interactive Inc., or Weather.com, in Atlanta.

Agronow says he hasn't had any trouble finding staffers with Linux skills, but those with both Linux expertise and Windows skills are rare. "Most people aren't as broad as that," he says.

Like others, Agronow says he believes someone with Unix experience can easily make the transition to Linux, but he suggests that the significant differences between Windows and Unix/Linux could keep some companies from adopting Linux. "If you were an all-Windows shop, maybe you don't have the contacts to hire a Linux person," he says.

Besides, companies want more than Linux skills, experts say. They want business experience, too. "It's certainly possible to hire junior systems administrators who have great knowledge in Linux," says Mark Mellis, a consultant at SystemExperts Corp., a Sudbury, Mass.-based provider of network security consulting services.

"The place where you run into trouble is typically they know the technical bits, but they don't understand the business," he says. "They understand the details of the implementation, but they don't understand the greater architectural details or the big picture. That's why they're junior people."

Even companies that rely on their senior Unix workers for help with Linux systems are encountering problems, DiDio says. "There's a presumption that if these guys could do Unix, then Linux should not be that much of a stretch for them. So they're throwing them into the trenches," but they're not always prepared to handle all the tinkering that needs to be done, she says.

The famously collaborative Linux community tries to pooh-pooh this, according to DiDio. "They'll say, 'We have thousands of developers who will jump in and help out' " via Linux chat rooms and Web sites, she says. "While that sounds very nice, that's not going to take the place of skilled in-house staff."

For Now

While Unix people may be able to make the transition to Linux over time, the shortage of skilled Linux personnel today is forcing some companies to look to vendors for help. But DiDio says even the big Linux distributors like Red Hat Inc. and Novell Inc. "don't have thousands of tech support people" to meet growing demand for Linux-related services.

DiDio cites the case of a major stock exchange that switched from Unix to Linux. The organization had to default to its hardware vendor, Hewlett-Packard Co., for installation help and service. "This is how people are going to make their money on Linux — selling the premium technical service and support," she says.

And while that window of opportunity won't last forever, it may exist for the foreseeable future.

"I think there will be more demand as deployment continues," says Dick Mackey, principal at SystemExperts. "And I think the demand will increase before the supply of skilled people will be available. It will be a good market for those people."

Meanwhile, companies are trying to close the Linux skills gap by sending staffers for training and hiring new people specifically for their Linux experience. "And some of the smaller companies are asking employees to go out and teach themselves," says Ciaraldi.

Peter Childers, vice president of global learning services at Raleigh, N.C.-based Red Hat, says he has seen demand for the company's Linux training and certification courses increase dramatically. Today, there are more than 12,800 Red Hat Certified Engineers and 5,900 Red Hat Certified Technicians, a designation launched in January 2003. And 97% of people attending training are sponsored by their companies, Childers says.

As manager of technical support at Boscov's Department Store LLC in Reading, Pa., Joe Poole oversees about 85 IT staffers, five of whom maintain the company's Linux system. He sent two staffers to a one-week Linux training course run by IBM, paying about $5,000 for both to attend. Those two workers now train colleagues in Linux.

"There's a scarcity of people who are absolutely trained in Linux, and that's all they do," Poole says. "But there's no scarcity of people who can pick it up."

Even so, Linux personnel seem increasingly valuable. Regardless of how you increase the level of Linux expertise in your IT shop, beware of companies that might try to raid your staff, particularly competitors in your industry, DiDio says. "Make [workers] sign on the dotted line if you train them that they'll stay with you for a year or two," she says. **ID 50385**

Pratt is a freelance writer in Waltham, Mass. You can contact her at markmary@mindspring.com.

What It Really Takes

AMAZON.COM INC. has used Linux in some shape or form since it was founded a decade ago. Even so, Tom Killalea, vice president of infrastructure at the Seattle-based Web retailer, doesn't seek out people specifically trained in Linux when he wants to hire new staff. "We hire a lot of people who tinker, who break things apart and put them back together," he says. "And through the economic ups and downs, we keep very squarely focused on innovation and customer service."

Killalea says his "hiring philosophy" has hindered his ability to hire people to work on Linux. "We're constantly looking for great computer scientists. We don't chase after the technology of the system," he says. "The reality is we want to hire really smart people, problem solvers, people who are curious. If we were to limit ourselves in our recruitment to the development of operating systems of the day, we'd be doing ourselves a disservice."

Mary K. Pratt

Pros and Cons

Is your company using Linux or other open-source software?

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Plan to use in next 12 months	14%
No plans	39%

BASE: 140 North American companies

The biggest concerns about Linux or open-source software among companies using it:

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- **Carlson Companies, Minnetonka, Minnesota**
- **State Street Corporation, Boston, Massachusetts**

Honorable Mention: Paul, Hastings, Janofsky & Walker LLP, Los Angeles, California

Storage Reliability and Data Recovery

Winners
- **Hershey Entertainment and Resorts Company, Hershey, Pennsylvania**
- **MidAmerica Bank, Clarendon Hills, Illinois**

Honorable Mention: Calpine Corporation, Houston, Texas

Data Lifecycle Management

Winners
- **Adirondack Electronics Markets, New York, New York**
- **PPL, Allentown, Pennsylvania**

Honorable Mention: NASA, Mountain View, California

Industry Regulation Compliance and Corporate Governance

Winners
- **MetLife Investors, Newport Beach, California**
- **Seattle Northwest Securities, Seattle, Washington**

Honorable Mention: The Center for the Evaluative Clinical Sciences, Hanover, New Hampshire

Innovation and Promise

Winners
- **New York State Psychiatric Institute, New York, New York**
- **Sports Illustrated, New York, New York**

Honorable Mention: Warner Music Group, Burbank, California

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- Strategic importance to the business.
- Substantive customer impact (service, retention, acquisition).
- Positive impact on other business/organization units.
- Addresses system and department interoperability issues and heterogeneous platform integration challenges.
- Provides a strategic advantage to the business/organization while anticipating and accommodating the deployment of future storage solution initiatives.
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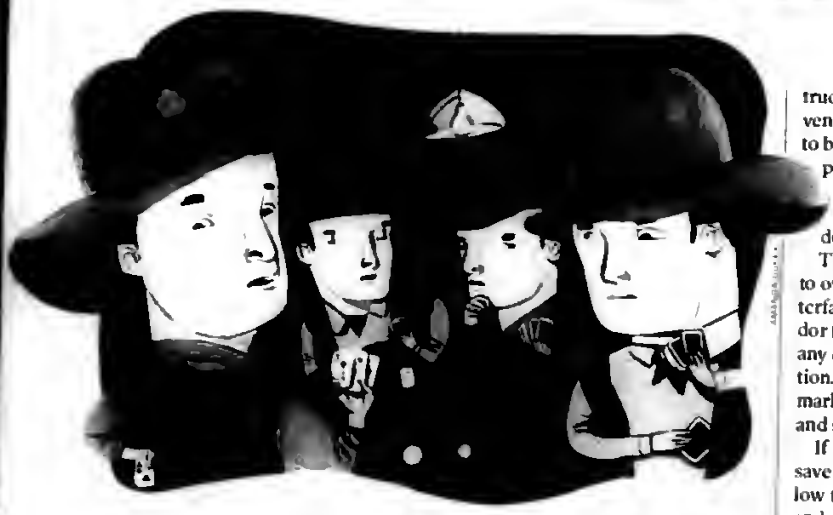

WILD CARD CONTRACTS

When a developer plans to resell your custom software, you'll need to lay all your cards on the table to get a good deal.

By Marc L. Songini

SOMETIMES it takes a partnership with a vendor to craft software that fits your company's specific needs. But if the vendor intends to resell the software after the collaboration is over, the development contract should guarantee your intellectual property rights and, in some cases, your royalties. Unfortunately, negotiating the legal framework for this kind of collaboration is like playing poker with a bunch of wild cards.

"There are no 'default' rules in the law that require the parties to come to a specific [contractual] conclusion," notes Amy Landers, a lawyer specializing in patent and copyright issues and a professor at the University of the Pacific's McGeorge School of Law in Sacramento, Calif. "As with any type of negotiation, there is going to be a give-and-take depending on what's important to the individual companies involved."

Landers and other attorneys specializing in copyright and patent issues offer some tips on how to navigate the complexity of the law to build a contract that works.

PROBLEM: Finding a partner you trust.
SOLUTION: Research. "You have to know the character, quality and capabilities of the party you are dealing with," says Paul Roy, an attorney at Mayer, Brown, Rowe & Maw LLP in Chicago. Investigate a potential partner through site visits, meetings with key personnel and discussions with other companies the vendor has done business with, he says.

PROBLEM: Who owns the software?
SOLUTION: If the work is collaborative, with staff from both companies contributing, you can negotiate a joint copyright, or patent certain modules and allow the vendor to patent or copyright others, says Frank Bernstein, a partner at law firm Sughrue Mion PLLC in Washington. Typically, such rights are partitioned according to which party did which piece of work, he says.

Alternatively, you can include a contract clause called "work for hire," which ensures that no matter who writes the software, the customer owns it, says Bernstein.

PROBLEM: Too many choices; no templates for the agreement.
SOLUTION: Hard work. There are multiple scenarios and trade-offs to consider in resolving copyright and patent issues, explains Ross Dannenberg, an attorney at Banner & Witcoff Ltd., a Washington-based firm. For example, a trucking company wants to engage the vendor of its logistics-tracking software to build on a custom Web interface. Depending on the nature of the original software license, the trucker may first need permission from the vendor to modify the software.

Then, if the trucking company wants to own the copyright for the Web interface, it can negotiate to pay the vendor for the customization and control any distribution of the final application. It could also engage the vendor to market and distribute the application and split the royalties.

If the trucking company wants to save money on development, it can allow the vendor to keep the copyright and distribution rights. In that case, the trucker should be charged only what the newly customized software will cost any other customer, but it has no special rights to the product, nor can it prohibit distribution to others.

PROBLEM: Protecting trade secrets. Custom software is likely to include proprietary code and even business processes, the distribution of which could be devastating to the customer and useful to competitors.
SOLUTION: Decide which proprietary code and processes need to be protected and how to do it. Carefully define each instance as your company's intellectual property. Then you can stipulate that some features may not be included in the market version, or you can restrict the vendor from using certain features for a period of time, Roy says.

You can also include a clause in the agreement that forbids the vendor to sell the application to your competitors, says Bernstein. Be sure to clearly define who the competition is.

PROBLEM: Policing the agreement.
SOLUTION: You can build in an auditing clause that gives you the right to review the application to be marketed and ensure that it's not exposing crucial proprietary code. Bernstein says.

The agreement can also specify methods of redress in the event of a breach of contract, including recovery of damages or the right to take back exclusive ownership of the software.

PROBLEM: Determining payment.
SOLUTION: You might pay less to a vendor that intends to make money selling the application later. One way of arriving at the fee is to review prior contracts of this type. If necessary, an accounting firm can produce a concrete range of numbers, says Landers.

If your company will get a cut of the eventual profits, the contract should also specify practical means to audit the resale numbers, she says.

Be sure to resolve these issues in writing before the coding starts. "Folks say they don't care when they actually do," says Diana McKenzie, an attorney at Chicago-based Neal, Gerber & Eisenberg LLP. "They just don't think they care till they've spent $60 million on a [customized] SAP installation and discovered competitors can copy what they've done in six months." **50529**

'COOPETITION'

THE FOLKS AT LOGISTICS service provider BDP International Inc. view the company's collaboration with a vendor to build a piece of industry-specific software as a type of "coopetition."

Needing to consolidate its global shipping operations and lacking the internal resources to develop the relevant applications in a timely fashion, the Philadelphia-based company turned to logistics and transportation software vendor Global Logistics Technologies Inc. (G-Log) in Shelton, Conn. Each company had something the other company wanted: BDP had industry-specific intellectual property, and G-Log had the framework with its existing GC3 product to build the application, says Mark Stocksdale, director of software development at BDP.

Legal teams worked with both parties to craft an agreement. As part of the contract, G-Log retains the exclusive right to modify the source code, but the application will be flexible enough for BDP to do integration and configuration changes as needed.

BDP mapped out its processes for ocean and air import and export, detailing the specific business requirements for each before handing the documentation over to G-Log. After that, the companies' development teams engaged in daily back-and-forth sessions to extend the processes and systems to meet international requirements. "It was a very collaborative approach," Stocksdale says.

In the end, G-Log will have the right to sell a general order shipment application with basic, generic industry processes embedded in it. Those processes will exclude any proprietary features but include things such as the ability to handle commercial invoices. The system is expected to go live at BDP next year.

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AMANDA DUFFY

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Be sure to resolve these issues in writing before the coding starts. "Folks say they don't care when they actually do," says Diana McKenzie, an attorney at Chicago-based Neal, Gerber & Eisenberg LLP. "They just don't think they care till they've spent $60 million on a [customized] SAP installation and discovered competitors can copy what they've done in six months." **50529**

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AFTER THE Deal

Focusing too hard on getting a deal done can doom the implementation.

The art of deal-making may be grist for best-selling books and corporate legends, but its importance has been blown all out of proportion, says **Danny Ertel**, *a founder and director of Vantage Partners LLC, a Boston-based consulting firm. Signing the deal is the beginning of the process of creating value, he says, but the "deal-maker mentality" common in negotiations hurts the chances of the contract being implemented successfully. In November's* Harvard Business Review, *Ertel proposes a different mind-set in which inking the deal is only the beginning. He told Kathleen Melymuka how that approach can change everything — for the better.*

What is the deal-maker mentality? That's one a lot of negotiators have. They feel their job is to close the deal faster, bigger, better. It's not thinking about what happens after the deal is signed.

How does this mind-set affect, say, an outsourcing negotiation? It drives a lot of behavior, especially among buyers. They end up forcing providers to perform some pretty unnatural acts to win business without worrying about the consequences. A negotiating team focuses on getting the deal signed. Some are date-driven by a quarter or year close, and they don't think hard enough about what it will take to realize the value of the deal five or 10 years down the road.

You advocate a different approach based on what you call an "implementation mind-set."

What does that look like? That's having the negotiating team see their job differently. Instead of getting the deal signed, their goal is helping to create value by creating a deal that can be implemeoted. After all, what's the goal line? Is it a signature on a page or cost reduction, innovation, business transformation?

To help in the shift to that way of thinking you offer a "benefit of hindsight" exercise. Can you explain? Hindsight is a wonderful thing, and it's actually more accessible than we realize. There's enough experience out there about outsourcing deals and large IT vendor contracts and what goes wrong with them over time that most negotiation teams should be able to tap into that experience and ask, "What tends to go wrong with these deals, and what can we do now in anticipation of those problems? How can we structure the deal and the relationship between us to minimize the chance of those problems happening?"

Some would say that penalty clauses take care of those issues. Penalty clauses give a false sense of security for the negotiators. Nobody wants to sit back and collect penalties; they want the deals to work. Simply having penalty clauses in the contract is not a good alternative to understanding what it will take to create value by implementing the deal.

Most negotiators play close to the vest, but you suggest a much less secretive approach. Can you talk about that? Sure. If your purpose is just signing the deal, theo you can decide to go caveat emptor all the way, and what they doo't know hurts them. But if your purpose is implementing and creating value through implementation, theo what they don't know can hurt you. So you need to think about what they need to understand.

Can you give me an example of something vendors may not know that you should tell them? At the outset of lots of outsourcing deals, there's an assumption: Don't tell them how much resistance to change there is in our organization or how messy our process is or how bad our data is because once we sign the deal, our mess becomes their mess. That's a recipe for conflict, scope changes and a relationship where the provider will have to cut corners somewhere else to dig out of the hole it didn't know it was getting itself into. If my company lacks some fundamental ability to perform my side of the deal or the problem is bigger than the vendor thinks it is, then letting them walk in not knowing about that is setting up for problems during implementation.

Handing off the deal after the negotiation can be the source of all kinds of problems, but you have some suggestions for avoiding those. Tell us about them. After the deal is done, the negotiators often go on to the next deal. Not enough time is spent making a good handoff or transition between the negotiatioo teams and the implementation teams. I recommend that organizations really plan a formal handoff and do that jointly so they have both buyer and seller negotiation teams briefing both sides of the implementation team.

What does that do for you? The briefing looks very different if you are both in the room together talking about why you did the deal you did and what it's going to take to make it work than if you're doing the briefings separately. If you brief separately, there's a tendency to just list all the ways you "got" them. And if both sides know they will be doing a joint briefing on why they did what they did, they spend less energy on the "gotcha" game during the negotiation and more energy on doing a deal based on objective criteria, external standards and industry practice, because both sides know they will need to jointly defend the deal.

If you approach negotiations with an implementation mind-set but the other side is full of deal-makers, won't you end up giving away the farm? There are two elements of a negotiation. One is communication: what I'm telling you to talk about. The other is commitment: what you're willing to agree to. Just because you come in with an implementation mind-set and put tough issues on the table and focus on how you're going to implement and warn in advance about what you want to talk about so they can be sure to prepare, it doesn't mean that If their side is difficult or shifty or too clever by half that you have to agree. **ID 50600**

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The cap for 2004 was reached five months into that fiscal year.

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Hiring among IT workers contin ues to gain strength. Job postings for technology professionals on Dice.com, an IT jobs Web site, were up 90% at the end of September compared with the previous year. Turnover rates for IT professionals at many companies have remained low for the past few years as the economy has sputtered and organizations have pared their IT staffs through a combination of attrition and layoffs. But that could change now that the job market for IT professionals is picking up steam, says Dice Inc. president Scot Melland. He spoke with *Computerworld*'s Thomas Hoffman about the ups and downs of the IT job market.

What are turnover rates for IT professionals these days? In technology jobs, turnover historically has been fairly high, in the 15% to 20% range. Turnover rates have been extremely low the past couple of years, and there's a lot of anxiety and wanderlust among tech professionals.

Are there still a lot of unemployed or underemployed technology workers in the U.S.? What you hear is exactly that. We don't have 100% employment of tech professionals. Since the Internet and Y2k and telecom booms burst in 2001, you had a number of people from 2001 to 2003 who left the tech field.

You read a lot about underemployed and unemployed professionals in the tech sector, and that's a reality. But if you look at some of the [U.S. Bureau of Labor Statistics] numbers, the unemployment rate is extremely low; it's like 2.3%.

How is this affecting enrollment rates for computer science undergrads and graduate students? This has been a topic that the National Science Foundation has spent a lot of time on. At the graduate school level, since 9/11, security restrictions around student visa programs have tightened up in a big way. Many highly skilled graduate students who used to come to the U.S. and stay here are going elsewhere because of the difficulties in getting a visa.

It's a serious skill issue for the country. People aren't worried about it because the employment market is still recovering, but it's quite possible that a tech jobs crunch is over the horizon. **50599**

SOURCE 2004 COST OF LIVING SURVEY
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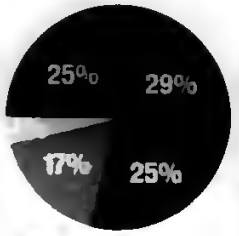

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The Implementation Mind-Set

THINK FUTURE.
A year into the contract, will the deal be working? What will have gone wrong?

NO SURPRISES.
The short-term advantages they may provide can cripple implementation in the long term.

THEIR PROBLEMS ARE YOUR PROBLEMS.
Expose hidden obstacles. Anything that will make implementation difficult for the other side will cost you, too.

ONE MESSAGE.
Briefing both sides at once avoids intrigue and keeps everyone on the same page.

CLOSING ISN'T EVERYTHING.
Don't embrace artificial deadlines. Take the time to get both sides aligned.

SUCCESS IS SWEETER THAN PUNISHMENT.
Penalty clauses are a lose/lose proposition, and they don't solve problems. Aim to create success, not to punish failure.

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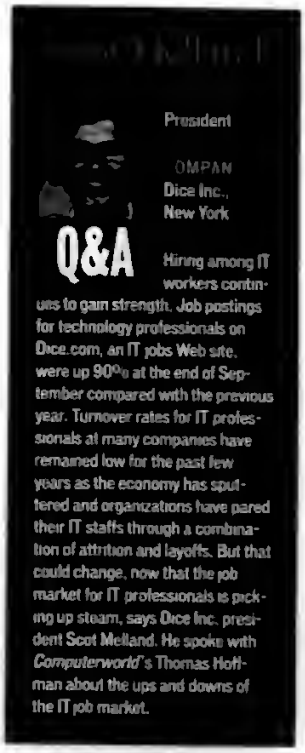

President

OMPAN

Dice Inc., New York

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BULLISH ON OFFSHORE

[illegible] market will continue to grow nearly 20% annually through 2008, according to Meta Group Inc. Meta says that by 2006, most IT organizations will have an offshore strategy. "With global resources costing one-third to one-fifth that of American employees – without accounting for hidden costs – and having higher process discipline, offshore strategies now pervade North American IT organizations," says Dean Davison, a Meta vice president. He predicts that despite political backlash, the average large company will send 60% of application work offshore by 2009.

Mercer HR Consulting evaluated and indexed the costs of more than 200 items, such as housing, food and clothing, in 144 cities. New York was used as a comparison point, with a cost index of 100.

1. Tokyo: 130.7
2. London: 119.0
3. Moscow: 117.4
4. Osaka, Japan: 116.1
5. Hong Kong: 109.5
6. Geneva: 108.2
7. Seoul, South Korea: 104.1
8. Copenhagen: 102.2
9. Zurich: 101.6
10. St. Petersburg, Russia: 101.4

SOURCE: 2004 COST OF LIVING SURVEY, MERCER HUMAN RESOURCE CONSULTING LLC

Nothing to Write Home About

In a recent *Computerworld* survey of 9,854 IT workers, respondents reported that these jobs were among those with the lowest average salary increases – only 1%:

- Directors of e-commerce
- Internet technology architects/strategists
- Database managers
- Database administrators
- Communications specialists

Looking Up

Middle managers see the economy brightening, and the number of them looking for jobs has decreased since last year, according to the results of a recent survey of 217 middle managers by Accenture Ltd.

Looking for another job	Think the economy will strengthen in the next 12 months
[illegible]	[illegible]

Work, Work, Work

On average, IT workers are putting in 47 hours per week.

- 40 hours per week
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Base: 9,854 IT workers

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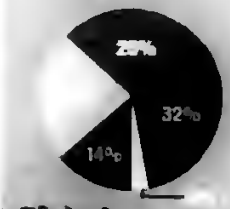
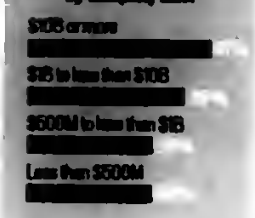
QUICK HITS

Project Portfolio Management

How far along are you in project portfolio management?



Project portfolio management adoption by company size:



What capabilities are you currently using in your portfolio management tool?

BASE: 209 technology decision-makers

SOURCE: Forrester Research Inc., Cambridge, Mass., September 2004

NORBERT J. KUBILUS

IT and Security: Converging Roles

ONE OF THE GREAT DEBATES in recent months has been whether the chief security officer should report to the company's CIO or CEO.

The fact that information security is first and foremost a technology issue fuels the argument for the CIO reporting line. The reasoning is that the CSO, as the person who safeguards the organization's information assets, should report to the CIO.

But the other side argues that security is more than a technology concern. Information security is a business issue that also includes physical security at the corporate level. Securing information is key to the organization's long-term growth and survival. This puts the responsibility for setting security policy squarely on the CEO and suggests that the CSO should report directly to him.

Lost in this debate is the real issue. Organizational structure is secondary to how security — IT and otherwise — is defined and implemeoted to support or enable corporate objectives. Who has the skills and knowledge to design a proper security methodology and to implement appropriate policies across the corporation? Who is responsible for defining, implementing and managing the enterprise architecture?

It's not the traditional security chief. The skills and expertise required of a CSO are quite different from those invoked while worrying about access doors and security-guard rounds.

A CSO needs a strong technology backgrouod coupled with the political and interpersonal skills to implement policies across tbe organization. A CSO must also stay current with laws and regulations that affect information security deployment and keep the CEO, CFO and board of directors apprised of security matters.

All C-level executives are liable for any loss of information, even if it's stolen the old-fashioned way — taken from the mailroom, for example. Criminal and civil penalties are the norm if a company is found negligent in protecting informatioo, and ignorance of the law is no defense.

So yes, the CSO should report to the CEO. But ideally, tbe CIO and the CSO should he one and the same person.

I have beld the title of CIO/CSO three times in my career while reporting to a CEO or COO. The dual job expands the CIO role to address corporatewide risk issues with a broad range of technical and nontechnical security processes and initiatives.

And the number of risks are increasing. According to FBI statistics, a company has a 90% chance of experiencing a computer or network security breach within the oext year, an 80% chance of suffering a financial loss due to a security breacb and a 44% chance that the loss will exceed $4 million.

New laws and regulations regarding information security are the result of dramatic increases in the loss of personal and financial information through cybercrimes and fraud.

Given the threat, the CIO/CSO needs to address three top-level network security challenges. The first is to prevent infestation of the network by viruses, worms, Trojan horses and so on, as well as to isolate and remove any infestation without affecting the operational ability of tbe corporation. Network infestation alooe will cause more than $100 billion in financial losses globally in 2004. The second cballenge is to protect private information from intruders who pose as legitimate users after gaining unauthorized network access. The final task is to defend against denial-of-service attacks in whicb legitimate business resources or customer access are diminished or denied.

I know from experience that no one can do this job alone. As custodian of the corporate information assets, the CIO/CSO must make information owners in the business units aware of their respoosibility for information security. He can do this by involving them in business impact analysis, risk assessment, business continuity planning and security policy development.

He must also work closely with the CFO, the human resources executive and the board audit committee. Together, they must ensure consistency of security policies and procedures and open administration of the security program, including clearly defined audit trails. This collaboratioo, with the CSO/CIO in the lead, is the best way to effectively protect the information and physical assets of the firm. **50528**

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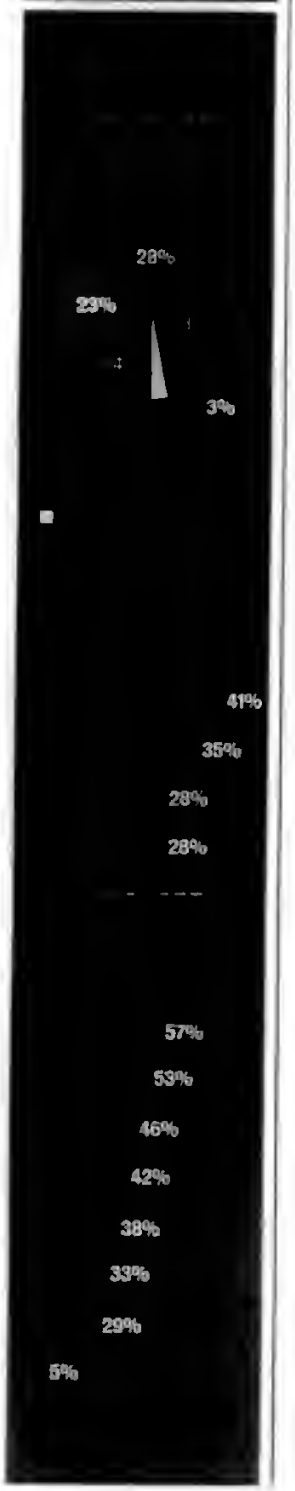

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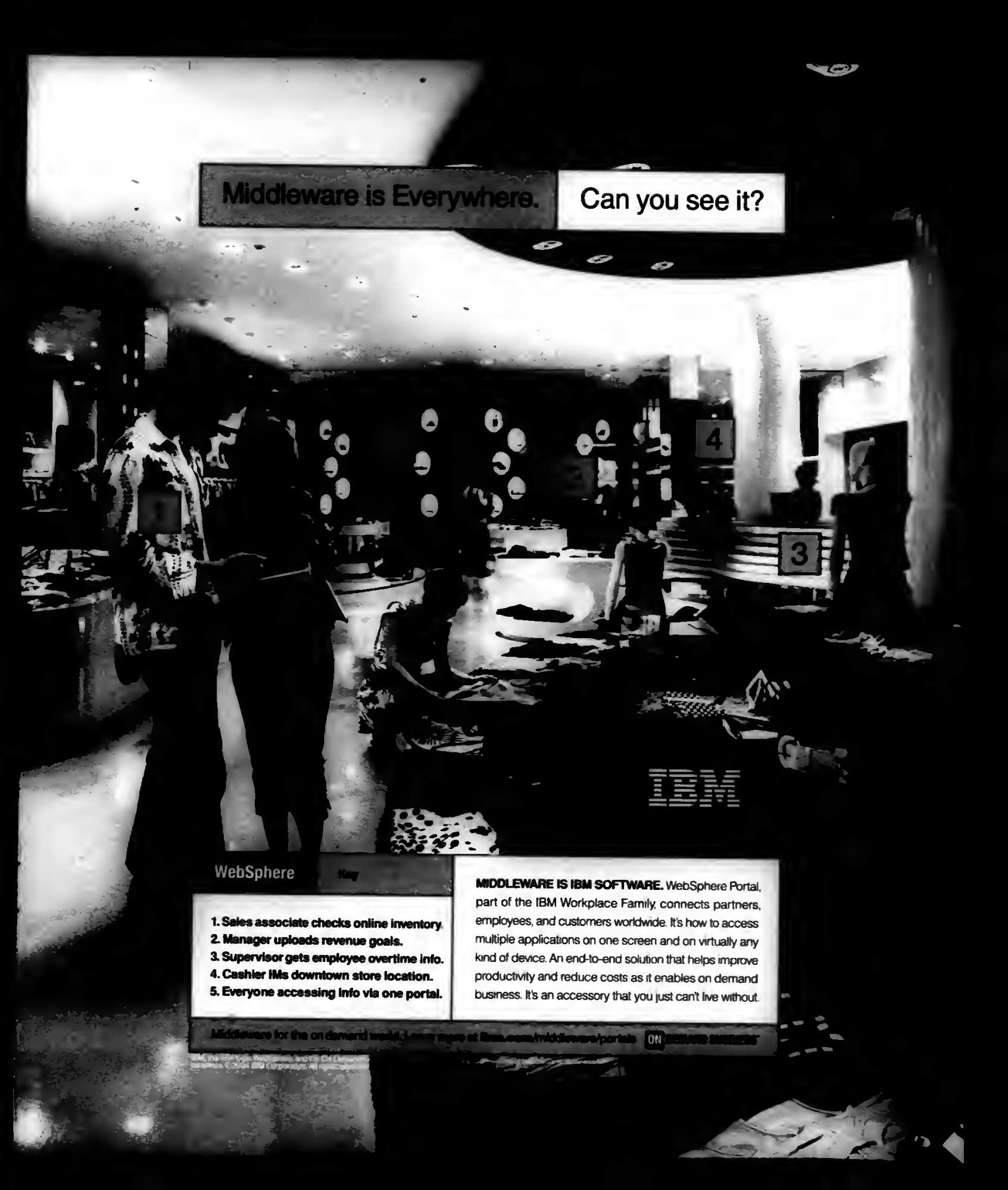
Middleware is Everywhere.
Can you see it?
4
3
IBM
WebSphere
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1. Sales associate checks online inventory.
2. Manager uploads revenue goals.
3. Supervisor gets employee overtime info.
4. Cashier IMs downtown store location.
5. Everyone accessing info via one portal.
MIDDLEWARE IS IBM SOFTWARE. WebSphere Portal, part of the IBM Workplace Family, connects partners, employees, and customers worldwide. It's how to access multiple applications on one screen and on virtually any kind of device. An end-to-end solution that helps improve productivity and reduce costs as it enables on demand business. It's an accessory that you just can't live without.
Middleware for the on demand world.

COMPUTER - Senior Network Engineer (Itasca IL) Utilize skills in multi-protocol and multi-platform networks to develop networking strategies network design and sound network management approaches Use structured methodology and engage in the analysis, design and implementation of complex systems. Development of requirements project management and design and implementation of complex systems. Must have a Bachelor's Degree or equivalent in Computer Science, CIS or related field (Will accept three years of experience in lieu of every 1 year of education) and have 5 years experience in the job offered or in a position implementing Microsoft Directory services and applications Experience may been obtained concurrently and must include (i) 2 years design in architecture of Microsoft directory services (ii) 2 years of experience in design level Microsoft System Management Server (SMS) or Microsoft Exchange (iii) 3 years each design experience in technologies that support the following systems DNS, DHCP, and TCP/IP (iv) 3 years experience in drafting of technology documentation (v) 1 year of supervisory experience (vi) 2 years of experience in product management and project management methodologies and (vii) Must be willing to travel nationwide as needed on a 100% basis. Must have legal authority to work in U.S. Send resume to Anthony Murphy (SNE), Spherion Corporation, One Pierce Place, Ste 550W, Itasca, IL 60143

SOFTWARE ENGINEER

Duties: St. Petersburg, Florida. Responsible for playing an active role in the life cycle stages of planning requirement definition design development, testing and support. Utilizes complex logic and works on and often leads projects that are of a high degree of complexity often involving more system integration and complex architecture. Will also mentor PA's during the life cycle stages and lead moderately complex projects. Coordinate assignments for a programming team. Will be heavily involved at the development level in highly complex customizations and new application developments and will be extremely active in the testing stage in the area of defect enhancement. In addition will function as the go-to person during the development and implementation stages of the Life Cycle play an integral role in system integration and the system interaction within the business, play a heavy role in the analysis and design stages, and play a technical leadership role. Requirements: Bachelor's degree or Computer Information systems or equivalent and 4 years of experience in the job offered Salary: 67,000/year. Hours: 40-hour week, 8AM - 5PM Contact: Send resume to Agency for Workforce Innovation P.O. Box 10869 Tallahassee, FL 32302 JOFL# 2574479

DSR Management Inc., a fast growing software Development Company is looking for the following personnel

1 Software Engineer BS in computer science/related field with 1 year experience in Software Analysis design and development with any four of the following Assembly C Programming, Computer Interfacing, EMC EMI Controller Area Network (CAN) VHDL, Verilog, CPLD FPGA

2 Software Engineer Dsgn & dvlp software sys & applns using Visual C++, Java, JSP, Java Beans, C#, ASP.NET, ADO.NET, Vignette Story Svr, Tc/Tk & related tools. Perform client & server side scripting. Dvlp relational databases using SQL, Oracle PL/SQL and related technologies. Requires MS or equiv in Comp Sc & 1 yr of relevant exper

3 QA Analyst: Test multi-tiered, web enabled e-commerce application using (VSS, Win Runner, Load Runner, Test Director, VB, ASP). Insure integrity of data access and transmission. Requires BS in CS or equiv and 1yr exp

4 Programmer Analyst: Develop /Write computer pgms (Java, J2EE, Struts, XML, Builder) to store, manipulate, retrieve & report data. Requires BS (CS/ Math/or Eng), 1yr of exp.& proof of legal auth to work in US

We accept foreign education equivalent of the degree or the degree equivalent in education and experience. All of the above positions require proof of legal authorization to work in US

Apply: HR, DSR Management, Inc. One Rotary Center, 1560 Sherman Ave, Suite 620, Evanston IL 60201 or via email at resumes@dsrminc.com

Seeking qualified applicants for the following positions in Memphis TN: Senior Systems Programmer: Devise procedures to solve complex systems and applications problems. Requirements: Bachelor's degree or equivalent* in computer science, MIS, engineering or related field plus 5 years of experience in systems programming. Experience with UNIX, C and logistics code development also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to: Virginia Lasley, FedEx Corporate Services, 2847 Business Park, Bldg J, Memphis, TN 38118-2831. EOE M/F/D/V

Computers: Programmer/ Analysts needed Seeking qual candidates possessing BS or equiv and/or rel work exp. Duties include: Work with 3 of the following: Visual Basic, Java, Oracle, SQL Server, UNIX. Fwd resume & ref. to: Aequor Technologies, Inc., Attn: HR, Colonial Center, 1500 2nd Ave. SE, Suite #105, Cedar Rapids, IA 52403.

itcareers.com can solve the labyrinth of job hunting by matching the right IT skills with the right IT position. Find out more at: www.itcareers.com

Computer Professionals (Multiple Openings) Software Engineer, Programmer Analyst, Database Analyst, Systems Analyst, Administrator/Network Administrator. Positions offered require the minimum of a Master's degree with a minimum of one year experience the applications listed. In lieu of Master's Degree, employer is willing to accept a Bachelor's Degree along with five (5) years of progressive professional experience. Please note, employer is willing to accept a foreign degree if it is determined to be the U.S. Equivalent to a Master's Degree or the U.S. Equivalent to a Bachelor's Degree along with five (5) progressive professional experience. Must have experience in one or more of the following: Oracle, Microsoft .NET, C, C++, Crystal Reports, Sybase, DB2, Visual Basic, MS DOS, COBOL, VB.NET, MS Access, SQL Server, COGNOS, Micro Strategy, PowerBuilder, VC++, JAVA, XML, ASP, HTML, Unix/ Network Programming. Extensive Travel and/or relocation. Attractive compensation package. Mail your resumes to: Human Resource Director, American Solution, Inc., 900 Commerce Drive, Ste. 103, Newark, DE 19713.

IT Application Analyst - Lead. BS in comp sci or related field; exp in Object Oriented Analysis & Dsgn & knowl of Java & J2EE envirnt (Servlets, EJB, JDBC, JSPs, JavaScript, HTML), Struts Framework, XML/XSL, MQ-Series, SQL, DB2, Websphere 5.0, COBOL, exp working in Mainframe Envirnt. Demonstrated communication skills; knowl of insurance & fin'l services; willing to travel & do on-call support. Resume & cvr ltr to: Jennifer Schwartz, HR, 711 High St., Des Moines, IA 50392-0550. Please refer to specific Job # ACW23175

Computer Professionals. Product Engineers wanted by TAC Automotive to design & develop converter-Clutch Control, torque converters using CAE, AutoCAD tools. Must have System or Computer engineering degree with exp. Please send resumes to: jobs@tacautomotive.com. EOE. No calls.

Systems People seeks prog. analysts, software engineers, DBAs to design customized applications to meet client's needs. Travel maybe required. Min requirement is BS/MS with IT exp. Competitive wage with full benefits, sponsor H/Green Card. Contact: jobs@systems-people.com. EOE

Network Systems Analyst

Position available for Network Systems Analyst. Duties: Design, install, configure, and support LAN/WAN (Local Area Network/ Wide Area Network) network configurations, architecture and internal systems. Maintain and test Windows NT Servers, network hardware and software. Analyze user requirements, procedures and problems to automate processing or to improve network systems. Monitor network system performance to ensure network availability to all system users and perform necessary maintenance to support network availability. Document the processes necessary for computer solutions. Identify needs of development, modification, or update of customer's network systems. Plan layout of new computer system or modification of existing system. Communicate with IT specialists of customers and instruct them to solve and prevent problems.

Requirements: Bachelor's degree in Computer Science or related field. Compensation: $32,000 per year plus benefits. Working conditions include 40+ hour work week with two weeks paid vacation per annum. Submit resume with complete references to: TransDigital Solutions, Inc., 167 West Main Street, Suite 210, Lexington, KY 40507. Only persons with authorization to work permanently in the U.S. need apply.

All duties of a Manager Hardware Engineering & NPI and managing engrs & technicians, providing direct engg contribution on technical projects & technical input to business dvlpmt activity. Managerial duties incl hiring technical staff, conducting performance reviews, personnel issues, assigning tasks to dept staff, reviewing & approving dept & project expenses & supervising lab facility. Specific technical duties incl system- & circuit-level dsgn, verification & providing mfg support for RF, baseband & audio applics for wireless communication products such as CDMA, GSM/GPRS/EDGE handsets, data modems, reference designs & evaluation platforms; schematic & PCB layout dsgn; dsgn of Rx, Tx & PLL RF circuitry, user interface, peripheral control, radio interface circuitry, & audio circuitry; dvlp test s/ware for high-volume factory test using C, Teststand & Labview tools; installation, optimization, support of test systms in mfg facilities; & analysis of factory test data & processes to identify & resolve factory test issues. Reqs Bach or equiv in Electrical Engg or related field; 5 yrs exp in job offrd or 5 yrs exp in rf/wave or radio frequency engg & dsgn. Respond to HR Mgr. Job Code #HWMGR-IT, Elektrobit Inc., 11121 Willows Rd NE, Ste 200, Redmond, WA 98052.

Network and Data Communications Analyst sought by Amplidyne, Inc., a Telecom Network Solutions company. BS in Comp Science/Electronics Eng. or a related field with 5 yrs. exp. Respond by resume to HR Dept., 16075 E. 32nd Avenue, Unit A, Aurora, CO 80111-1529

Software Engineer (Huntsville Alabama) - Java application programmer responsible for development, integration, and testing of telecommunication products into a distributed, multi-client, multi-server Element Management System. Must have a Bachelor degree or foreign degree equivalent in Electrical Engineering or Computer Engineering. Education or work background must include one year of experience in Java application programming. Must have legal authority to work in U.S. Send resume to D. Tober (REF:SE), ADTRAN, 901 Explorer Blvd., Huntsville, AL 35806.

Bioinformatics Programmer wanted to oversee all aspects of comp. network functions in Center for Cancer Systems Biology (CCSB) incl admin of multi-platform network & mgmt. of IT infrastructure & oper syst for all databases. Will also supervise bioinform. analysts, create & implement bioinform. tools for analysis of functional genomics & proteomics & dvlp web-based methods for accessing biological datasets. Must have MS deg. in Bioinform. or Comp. Sc. & 2 yrs. Bioinform. dvlpmt. exper., incl exper. working on multiple platforms (Unix/Linux, PC, Mac) & exper. in genomic or proteomic data analyses using AceDB, MYSQL +/or Oracle, Perl, C++ & Java. Send resume to Lorraine J. Barnes, International Services, Dana Farber Cancer Institute, 44 Binney St., Boston, MA 02115

BCCUSA Inc - South Portland, ME needs experienced Programmer Analysts having a Bachelors Degree with minimum two years of progressive experience in J2EE architecture with understanding of Enterprise System and Application architecture. Must also possess knowledge of RUP & UML methodology, Requisite Pro, Rational Rose, Rational Clear Quest, Rational Clear Case, MS Visio, MS Project, JAD sessions, Winrunner, and Loadrunner. Competitive salary and benefits. M-F 40 hours/week. Please mail your resume to BCCUSA Inc. HR Dept. 650Main Street, Ste 201, South Portland, ME-04106

Assistant Mgrs. of Operations needed. Seeking qual candidates possessing MS or equiv &/or rel work exp. Part of req. rel. work exp must include 1 yr working in client support to resolve customer IT issues & working w/ SQL Server. Duties include: analyze business processes - implement IT solutions, working w/ Oracle. Fwd. resume & ref. & salary req. to: TRRS Imaging (USA), Inc., Attn: HR, 200 Middlesex Essex Tpk, #300, Iselin, NJ 08830.

Senior Account Manager wanted to source and support new technical business development opportunities. Must have Bachelor's degree in Electrical Engineering, Computer Science or related field and 4 years experience in corporate sales in the software services industry, including 2 years experience with project management and software development. Send resume to: Hilary Gosselin, Human Resources Manager, Lionbridge Technologies, Inc., 492 Old Connecticut Path, Framingham, MA 01701

Programmer Analyst needed w/Bachelors degree or Foreign Equivalent in Engg. or Comp. Scie. or Math & 2 yrs. exp to analyze & design Entity & Functional Models using Oracle Designer. Create & test Java programs that interact with Oracle Database using JDBC & JSERVER. Create applications using Oracle Workflow. Create & test voice applications using VoiceXML & Voice Grammars using Nuance Grammar Builder. Develop custom reports using JReports. Implement & maintain Data Exchange using reQSeries. Mail resumes to: Bytegus Inc., (Ref #001) Cantera Center, 4320 Winfield Road, Suite 200, Warrenville, IL 60555

Applications Engineer needed to dsgn & dvlp s/ware for telecom interoffice, narrow/broad band provisioning using Enterprise Architect, CEM, Tuxedo, C++, Unix, Java, J2EE, XML, XSLT, Informix, Oracle; dsgn & dvlp interfaces for OS & GUI using Java Swing, JSP, EJB, XHTML, SVG & WebLogic. Apply to: Global Consultants, Attn: Hireme, 8800 Grand Oaks Cir #100, Tampa, FL 33637

Software Developer

To develop applications for a variety of educational systems and business applications using Asp/Asp.NET, C++, C# and VB6 and using MS Visual Studio as coding environment. Req. MS degree in Comp. Sci., Info. Mgmt or other related field, familiarity with double-byte character sets/Unicode for Asian language-based application interfaces and prefic. in Asp/ Asp.NET, C++, C# and Visual Studio 40hrs/wk. Send resume & cover letter to Fred Ferguson, Curriculum Associates, Inc., P.O. Box 2001, N. Billerica, MA 01862-9914. Fax: (978) 663-0521

Programmer-Analyst II for NE OH. Plan/develop/test/document computer programs apply experience of programming techniques and comp systems evaluate user request for new/modified programs, enter program codes into comp system/to design software/websites and digitize images Masters/MBA in MIS or Bachelor's in Comp Sc/Engineering 3 yrs Exp/**job related** including prev work w/ NET Framework, Windows, VB, VC++ Flash, Java, JSP, JewelScan Oracle Access Word Powerpoint developing Jewelry business software and troubleshooting hardware and software problems and enhancing images using Photoshop req Travel req Resumes (no calls) to 25200 Chagrin Blvd Suite 101, Beachwood, OH 44122 EOE

F/T Junior Software Engineer Responsible for the development, maintenance and enhancement of applications running in a real-time operating system Responsible for the development of utilities on various platforms using C and C++ Must have a Bachelor's degree in Computer Science & Engineering, related field, or foreign degree equivalent. Educational background must have included C and C++ Salary Competitive Send resume to: Srivatsan Ramachandran, AMI 6145F Northbelt Pkwy, Norcross GA 30071

F/T Jr Software Engineer Responsible for development, maintenance, and enhancement of applications running in a real-time operating system Responsible for the development of utilities on various platforms. Must have a Bachelor's degree or Electrical Engineering, related field, or foreign degree equivalent. Educational background must have included DOS, Windows 95/NT, UNIX, and Linux. Salary Competitive. Send resume to Srivatsan Ramachandran, A.M.I. 6145-F Northbelt Parkway, Norcross, GA 30071

Technical Writer Northport, AL (2 positions): Analyze & document client business processes to integrate technology Prepare system & program specifications, document program & system logic, prep & maintain user guides & technical manuals, monitor system changes; develop & document recovery plans, standard ops procedures & equip maintenance Req: Bachelors (or foreign equiv or equiv in experience and/or education) in Comp Applications or Engineering or related fields + 2 yrs exp. in job, or 2 yrs performing technical documenting of systems. Mail resume to: HR, Applied Infotech, 501 Bridge Ave, Northport, AL 35746

Programmer/Systems Analyst Participate in solution delivery: developing prototypes, writing analyses and design documents, ensuring operational control of systems, installing software, writing and testing code, and debugging software programs. Must have Bachelor's in Computer Science or related, 1 yr exp plus knowledge of Oracle Developer 2000 (Forms, Reports, Graph & Menu), PL/SQL, SQL* Plus, SQL* Loader, Pro*C, and Discoverer 2000. Send resume to Fastek International Attn: David Kemper, 1425 60th St. NE Cedar Rapids, IA 52402.

F/T Software Engineer Responsible for developing, enhancing, maintaining Network/Storage software components using Assembly, C, C++ and RTOS. Support OEMs who are using these components Work with Test and Validation groups to ensure component is tested thoroughly using iSCSI and MPLS Follow Software Development Procedures Use Source Code Control Provide technical documentation and regular status reports to management. Must have a Bachelor's degree in Electronic and Communication Engineering related field, or foreign degree equivalent Must have 1 yr of exp in job offered or a position with same duties Salary Competitive Send resume to Srivatsan Ramachandran AMI 6145F Northbelt Pkwy Norcross GA 30071

Systems Analyst/Programmer Sr Charlotte, NC Rsp for initial deployment & ongoing support of computer apps Reqs: BA in Comp Science 2yrs exp in pos offd or as IT Staff Consultant. The 2yrs exp must incl work w/ software analysis, design dev & implem using Java incl Java Servlets (Single Servlet Model), JSP, Java Beans, JavaScript, JDBC, JNDI & JMS, w/ develop tools such as WSAD for deployment on IBM WebSphere Server on a UNIX platform, as well as exp dev web-based apps utilizing HTML, XML, XSL & LDAP (or similar tech.) & exp working w/ Oracle & DB2 databases. Must have Sun Java Programmer Cert. M-F 8-5, Send resume to Randy Buck, Wachovia Corp., 1525 West W.T. Harris Blvd., NC0775, Charlotte, NC 28262-0775 No phone calls.

Computers - Senior Technical Consultants needed. Seeking qualified candidates possessing BS or equiv. and/or rel. work exp. Duties include Develop business implementation strategies & address specific issues that arise during implementation. Provide configuration management to DBA staff for developed software & troubleshoot products. Work with Oracle ERP Applications, Developer 2000, Oracle Workflow Builder, Oracle J Developer, PL/SQL & Oracle Discoverer. Fwd resume & references to: Core Services Corporation, Attn: HR, 610 Rahway Avenue, 2nd Floor Union, NJ 07083.

Programmer-Analysts needed to analyze, dsgn, dvlp telecom inventory, provisioning & activation systems, banking & fin'l acctg systems using C/C++, Java, STL, Shell Scripts, sed, AWK, PERL, Purify, Informix, Oracle, CVS, Tuxedo, CEM, UML, XML, Xerces, XMLSpy, HTML, TL1, Apache, Tomcat, Windows, UNIX, HP-UX, Solaris & Linux. Resume to Global Consultants, Attn: Hiriame, 25 Airport Rd, Morristown, NJ 07960

Comp S/W Engrs (hvg Mast Deg w/2 or Bach Deg w/5 yrs exp) & Progmr Analysts w/ exp req'd. Exp must incl combinations of C, C++, VC++, Visual Basic, Java, PB, SQL, PL/SQL, SAP, Peoplesoft, Siebel, Informatica, BusinessObjects, Essbase, Cognos, MicroStrategy, Oracle, Sybase, DB2, Unix & Windows NT. Apply to HRD, Millennium Information Tech, Airport Office Center, 2348 Post Road, Warwick, RI 02886

F/T Software Engineer Responsible for designing generic modules/device drivers using C/C++ Review the design of the modules using software engineering methodologies and Windows NT Develop the corresponding modules using bootloader Debug and test the modules using different methods and test equipments used in embedded environment e.g. Logic Analyzers Must have 2 yrs of exp in job offered or a position w/ same duties Must have a Bachelor's degree in Computer Science & Engineering related field or foreign degree equivalent Salary Competitive Send resume to Srivatsan Ramchandran AMI 6145-F Northbelt Pkwy, Norcross GA 30071

IT CAREER OPPORTUNITIES

GEORGIA - Technical Analyst/ Computer Systems Analyst

ILLINOIS - Senior Member of Technical Staff/ Computer and Information Systems Manager

MASSACHUSETTS* - (HQ of CSC Consulting Inc.) - Employment a throughout U.S. Senior Consultant /Software Engineer

Positions require a BS and/or relevant experience, a combination of experience and college level education may be accepted. The flexibility to travel and be on-call may be necessary. Proof of legal authorization to work in the U.S. is required. Please forward your resume to Computer Sciences Corp. Attn: J. Le, 2100 E. Grand Ave., Mail Code A200, El Segundo, CA 90245. Please indicate the specific occupation and location for which you are applying.

Embedded Software Eng wanted by company engaged in graphics and multimedia technology design, manufacturing and marketing. Requires Bach. in CS or EE plus 2 yrs exp. including Set Top Box methodologies and ATSC. Reply to ATI Research, Inc. H.R. Dept., Attn: K.B., 62 Forest Street, Marlborough, MA 01752.

RPG Programmer Design software using programming in Report Program Generator II (RPGII), Operation Control Language (OCL), California Software Baby 36 (Graphic User Interface and Visual Basic. Use of correlation analysis forecasting and delivery routing optimization. Update and support of current system. Troubleshooting and fix existing application problems for help desk. Require Bachelor's degree or will accept a Master's degree in Computer or Industrial Engineering. Prevailing salary. Must have indefinite work authorization. Send resume to humanresources@suburbansoftware.com

Quality Assurance Mgr., Wachovia Corp. Charlotte. Oversee QA for risk mgmt. tool. Reqs. BA Comp. Science, Math, or Finance & 5 yrs exp. in pos. offd or as a Sr. Consultant or IT Project Mgr. The 5 yrs must incl. IT business analysis, system testing & fin. appl. support in Unix, J2EE, Sybase, Oracle & work w/ FX products & risk mgmt. reporting 3 must incl. QA mgmt. & proc. using capability maturity model in Level 5 environ. & 6n sigma. Must possess PMP® cert. M-F, 8-5. Send cvr./resume to: Meredith Elberson, Wachovia Corp., 401 S. Tryon Street, 15th Floor, Charlotte, NC 28288-0475. No phone calls.

Sr. Programmer Analysts...

...needed for Intermountain Health Care located in Salt Lake City, UT.

Please visit our website at

www.ihc.com

for our online application,

job reference #17574

Work. Miracles

IT company based in Nashua, NH requires Programmer Analysts, Systems Analysts, Software Engineers, Systems Administrators and Database Administrators having a minimum of Bachelors or Master's or Equivalent Degree and 1-3 years of experience in client server technologies, designing, developing and implementing web based application packages using C, C++, Java, Java Script, EJB, XML, VB,VC++, Unix, PL/SQL, ASP, VB Net, ASP.Net and C#, SAP R/3, SD, MM, FI, ABAP/4, ALE/EDI, BW, PeopleSoft, Oracle, Sybase & MS-SQL Server, AS/400 RPG II,E, Sun Solaris, HP-Unix, Linux, AIX, Windows NT/Windows 2K, Seibel, Oracle Financials, Win Runner, Load Runner, Rational Robot, Test Suit, Lotus Notes, Domino, Lotus Script, Powerbuilder, Delphi. Please mail resume to Software Research Associates, Inc. d/b/a NRI, HR Department, 76 North Eastern Blvd., Suite 29-A/36-A8, Nashua, NH - 03062

SOFTWARE ENGINEER to provide on-site consultancy in design, development, customization, testing and maintenance of e-commerce web-enabled applications software using Java, JSP, DB2, COM, DCOM, VB, ASP, Rational Rose, Rational RequisitePro, UML, Oracle and SQL Server; create database objects, code management, requirement management and code integration. Require: Bachelor's (or equivalent) in Computer Science and five years experience in the job offered or any experience providing skills in described duties. 40% travel required to client sites within the United States. Competitive salary and benefits, 40-hour/week, 8 am to 5:30 pm M-F. Apply with resume to President, IQ Technologies, Inc., 9471 Brentwood Drive, Suite 74, Lavista, NE 68128

Sr. Software & Sys. Engg. NH-Design develop. and implement software applications using C, C++, Cobol, Pro'C' Pascal, CLISP, Java, JavaScript, VB Script, ASP.net, Perl, Crystal Reports, Power Builder, Unix, IPC, TFTP, UML, UDP etc. Develop databases using Oracle, Informix, SQL Server and Sybase. Provide programming using multi-threading, sockets, IPC, windows-SDK, Shell and TCP/IP. Develop GUIs using MFC and Java AWT. Responsible for network system application development using Mobitex, CSD, GSM and GPRS. Configure management system using Rational ClearCase, PVCS, Sublime and Microsoft Source Safe. Perform maintenance development and code optimizations. Define and generate objects and source code. Analyze, evaluate and prepare program specifications and troubleshoot technical problems. Req: master's or equivalent degree in CS + & yrs of exp. @ sal. $87,000p.a. + Send 2 copies of resume to: Job Order#2004-555, P.O. Box 989, Concord, NH 03302-0989

Software Engineer (7 positions) various locations - Research, design and develop computer software systems in conjunction with hardware product development, applying principles and techniques of computer science, engineering and mathematical analysis. Requires 4 yrs exp in job offered or 4 yrs exp as Programmer Analyst or Systems Analyst. Must have 1-yr exp using Active Server Pages and SQL Programming. 5 day, 40 hrs/wk, $73,965/yr. Please mail resumes to Workforce Development Programs, PO Box 46547, Denver, CO 80202 and refer to order number CO5857011

F/T Software Engineer Responsible for design, develop, enhance, and maintain Network Storage Server software components using various operating systems and computer networking technologies. Design and analyze the software components for various computer organizations using various data structures, advanced algorithms and database management techniques. Coding and debugging the software components using Higher level and Assembler level languages. Develop user interfaces using E-commerce techniques. Follow software engineering procedures throughout life cycle of development. Must have a Masters degree in Computer Science and Engineering, related field or foreign degree equivalent. Educational background must have included Data Structures and Algorithms, Computer Organization, Operating Systems, Computer Networks, Software Engineering, Database Management Systems. Topics in Design and Analysis of Advanced Algorithms, Higher Level Language Lab, Assembler Level Language lab and E-Commerce. Salary Competitive. Send resume to Srivatsan Ramachandran AMI 6145F Northbelt Pkwy., Norcross, GA 30071

Western Computer is looking for a Business Analyst/Navision Implementation Specialist/ Navision Support Specialist/ Project Manager with a Bachelors or equivalent and experience in related occupation to analyse, train implement manage using Microsoft Navision based software. Strong Accounting knowledge is preferred. Please send resumes to Diane, Western Computer, 980 Enchanted Way, Ste 104, Simi Valley, CA 93065 or email dianep@westerncomputer.com

F/T Software Engineer. Responsible for designing, developing, enhancing, and maintaining Network Server Management Software Components using various operating systems and computer networking technologies. Design and analyze the software components for various computer organizations using various data structures, database management, and distributed computing techniques. Coding software components using both assembler level and higher level languages. Develop user interfaces using e-commerce concepts. Follow Software Engineering procedures throughout life cycle of development. Must have a Masters degree in Computer Science and Engineering, related field or foreign degree equivalent. Educational background must have included Data Structures and Algorithms, Computer Organization, Distributed Computing, Operating Systems, Computer Networks, Software Engineering, Database Management Systems, Higher Level Language Lab, Assembler Level Language Lab, E Commerce. Salary Competitive. Send resume to Srinivasan Ramachandran, A M I, 5145-F Northbelt Parkway, Norcross, GA 30071

UNIX Systems Administrator (NYC)

Software Company located in Lower Manhattan seeks a UNIX Systems Administrator

The following are the main responsibilities
- Analyze & evaluate user needs.
- Design & configure systems.
- Implement, test & write scripts as needed to ensure system/network performance.
- Write & execute scripts, maintaining library of test scripts & creating overall testing infrastructure.
- Perform hardware install and maintenance Requirements.
- BS in Engineering/Computer Science
- 1 year experience as a UNIX System Administrator
- Shell Programming - Korn Bourne, csh and perl.
- Familiarity with Solaris and Linux operating systems.
- Must be familiar with the Sun enterprise class servers
- Must be familiar with Intel based servers.
- Should be familiar with UNIX security.

Apply to Royalblue Financial Corp 17 State Street, New York NY 10004, Attn CTM-WC

Programmer Analysts needed. Duties: Perform process re-engineering and improvement. Gather and evaluate requirements, translate business requirements and prepare technical specifications. Provide system development initiatives and complex reporting and analyses to support various functions. Devise, develop and test applications using appropriate end user tools such as PCSAS, COGNOS and SQL. Validate data integrity by ensuring timely maintenance, updates code sets, procedure and diagnosis codes. Work with Teradata and Oracle databases on Unix platform. Install programs and procedures. Perform complex data mapping, data mining, data extraction and manipulation. Travel to set up systems, interact with clients, and train users at various locations for different short and long term projects. Req: BS or equiv in Comp Sci/ Engg, Math or related & 2 yrs in the job offered or 2 yrs as a comp prof. Experience must include 2 yrs working w/PCSAS, Teradata and COGNOS. Sev Pos. avail. Sal $44,400.00/yr, 40 hrs/wk, 8:00AM-5:00PM. Send resume to PA Career Link/Job Service Site Manager, Beaver County CareerLink, 2103 Ninth Avenue, Beaver Falls, PA 15010-3957. Reference Job Order No. WEB 472887

Programmer Analyst needed w/2 yrs exp to analyze, design, develop and debug the code for n-tier multi channel (web & voice) system using VoiceXML, XSL, Java, J2EE & XML. Test & deploy the voice applications on Telime platforms. Build the security applications using RSA encryption & SOAP web services. Build Java GUI applications using Java Swing APIs, JAXP & Xalan. Mail resumes to Bhrigus Inc. (Ref #002) Centera Center, 4320 Winfield Road, Suite 200, Warrenville, IL 60555

COMPUTERS

Product Verification Engineer needed to plan & conduct system tests and analyze/configure/test L1-L3 network protocols in support of product development in Raleigh NC. Req's: MS+3 yr experience or BS+5. Exp must include: UNIX, network hardware & OS, automated test infrastructure, analysis, configuring & testing OSI L1-L3 protocols, Shell/CGI/Tcl scripting, Java & C/C++ programming. Principals only. Mail resume to: C. Cocchiarella/Re.AT, Sprient Communications, 26750 Agoura Road, Calabasas, CA 91302. EOE.

System Engineer w/ 2 yrs exp to design, configure & implement s/w applications using HP Open View Suite, Spectrum network management, configure Cisco routers & switches using Cisco works. Set up IP protocols with SNMP & MIB. MS – SQL & Oracle database on Sun Solaris, HP Unix & Windows. Mail res to: CompuInfo, 1119-1D, Crab Orchard Drive, Raleigh, NC 27606

Computer Professionals (Multiple Openings) Software Engineer, Programmer Analyst, Database Analyst, Systems Analyst, Administration/Network Administrator. Positions offered require the minimum of a four-year Bachelor Degree or a foreign degree determined to be the U.S. Equivalent to a Bachelor's Degree, also require a minimum of one year experience in one or more of the following: Oracle, Microsfot.NET, C, C++, Crystal Reports, Sybase, DB2, Visual Basic, MS DOS, COBOL, VB.NET, MS Access, SQL Server, COGNOS, Micro Strategy, PowerBuilder, VC++, JAVA, XML, ASP, HTML, Unix, Network Programming. Extensive Travel and/or relocation. Attractive compensation package. Mail your resumes to: Human Resource Director, American Solution, Inc., 100 Commerce Drive, Ste. 103, Newark, DE 19713.

Sr Software Engineer wanted to mng software dvlpmt, projs for n-tier, web-based CRM apps. for use by the invest mngmt & energy indust. Must have B.S. deg. in Comp Sc, Eng or related field & min 3 yrs. exper. developing n-tier, web-based apps using Microsoft.NET framework (including ASP.NET, Visual C# .NET & Visual Basic.NET), XML & Web Services, COM/ActiveX components, incl COM+ & SQL programming + object-oriented analysis, design & programming exper., incl UML, & exper. developing & integrating CRM apps. & developing commercial apps. Send resume to Steven Notheim, CFO, Satuit Technologies, Inc., 80 Washington St., Unit M-50, Norwell, MA 02061

Statistical Modeling Analyst, Wachovia Corp., Charlotte, NC. Design, dev, implement analytical programs, algorithms & scoring models re. predicting customer behavior, profitability, market drivers, product ID, & marketing campaigns. Reqs. BA in Math or Stats + 2 yrs exp in pos. offered or as a Stat. Programmer Analyst, TA, or Software Dvlp. The 2 yrs exp. must incl bldg adv quant models using algorithms & scoring models, conducting stat. analyses using SAS, SPSS or similar tools predicting customer behavior based on large quantities of data. 1 yr exp. must incl defining & assessing marketing strategies in a financial instit. M-F 8-5. Send resume to Beth Shook, Wachovia Corp., 1525 West W.T. Harris Blvd., NC0134, Charlotte, NC 28262-0134. No phone calls.

F/T Research Software Engineer for NM location. Responsible for performing database design, system configuration, data conversion planning, application design and development, documentation development, and application and system training. Configure hardware, software, and network components of GIS and LIDAR systems. Assist clients in developing practical programs that maximize the benefits of their GIS investment. Analyze clients' system operations to determine opportunities for increasing production efficiency. Must have a Master's degree Computer Science related field, or foreign degree equivalent. Must have 2 yrs. of exp. in job offered or a position w/ same duties. Salary: Competitive. Send resumes to Sheila Seals, Spectrum Mapping, LLC, Ref: 222, 28908 Information Lane, Easton, MD 21601

PROG. ANALYST - ORACLE APPLNS

Perform analysis, dsgn & implementation on Oracle applns sys. software incl. quality assurance, production support, documentation & testing for Enterprise Resource Planning projects. MS in Comp. Sci. or Electrical or Electronics Engrng + 2 yrs exp in job offered or as a Software Engnr - Oracle Applns. Exp must incl. Oracle applns, C, C++, PL/SQL, OOAD & UML. High mobility preferred. 40 hrs/wk, OT as reqd. 8 am - 5pm, $66,730/yr. Submit resume to Manager, Butler County Career-Link, Pullman Conference Center, 112 Hollywood Drive, Suite 101, Butler, PA 16001-5699. Refer to Job Order No. WEB 474249

Software Engineers to lead teams to analyze, design, develop client/server, web appls in ASP, XML, ActiveX Controls, VB, ASP.NET, VB.Net, ADO.Net, HTML, Oracle, SQL Server, Windows etc; create complex business components using COM, dynamic link libraries and implement them in multi-tier env using MS Transaction Server; trouble shoot software/hardware problems, interact between project members, vendors, customers and recommend hardware/software upgrades; provide training to end users, team members. Require: MS in CS/Engg (any branch) & 3 yrs. exp in job offered or a BS or foreign equiv in CS/Engineering & 5 yrs of progressive exp in IT. Travel involved. Comp. Salary. F/T. Resumes: HR, Synergy America Inc, 6340 Sugarloaf Parkway, Ste 140, Duluth, GA30097

F/T Computer Programmer. Responsible for analyze, review, modify and implement new and existing programs using iSeries AS/400 systems, and RPG/400, Delphi and Java programming Languages. Develop specifications using systems analysis. Adapt programs to new requirements and monitor their performance. Must have a Bachelor's degree in Computer Science, Electronic Engineering, related field or foreign degree equivalent. Must have 3 yrs of exp in job offered or a position w/ same duties. Salary: Competitive. Send resume to: C. Lesker, Decision TIS, Inc., 11810 Northfall LN, Bldg. 1203, Alpharetta, GA 30004

Programmer Analysts to analyze, design web appls using Java, VB, Java Script, VBScript, HTML, DHTML, ASP, PHP, Access, Oracle, SQL Server, Dreamweaver, Active X, IIS under Windows, UNIX OS; generate batch reports; conduct user req/feasibility studies & systems analysis, maintain, document, support, test and debug appls. Require: B.S. or foreign equiv in CS/Engg(any branch) with 2 yrs exp in web based appls. High Salary. F/T. Travel involved. Resume to: HR, Salem Associates, Inc., 405 8th Ave., Ste102, Des Moines, IA50309

Software Developer under supervision, will develop, test and implement client-server web based applications using Com, MSMQ, C, C++, Pl/Sql, HTML, Visual Basic, Windows 95, VB-Script, JavaScript, Cobol. Network technologies and Oracle. Will be responsible for complete life cycle of the project. 40 hrs/week, Mon-Fri, 8am to 5pm. Bachelor's Degree, one year & 6 months experience required. Competitive salary. Send resume to Manager, Yetma Investment Ltd., 5001 W. Fond du Lac Ave., Milwaukee, WI 53216.

ADC Telecommunications, Inc. requires a Systems Development Engineer, Product Development, for our office in Raleigh, North Carolina. Position provides technical leadership to Design Engineering and Product Development and Marketing to translate marketing product requirements into system-wide software/hardware architecture specifications for access network products and for providing technical guidance, including feasibility studies and applicable industry standard requirements.

Minimum Qualifications Masters Degree with a major/focus in Computer Science, Electrical Engineering, or Software Engineering or equivalent foreign degree as established by a written evaluation and 5 years of experience in telecommunications software design and development using SDL, C, HDLC, TCP/IP, hardware device drivers, finite state machines, protocol stack development, call processing and OSI modeling implementing protocols of ISDN, LAPD, Frame Relay and Q.931. Also requires 1 year of experience using Hierarchical PNNI. Experience may be gained concurrently.

Send a detailed resume to ADC Global Staffing, Job No. 2176, ADC Telecommunications, 13625 Technology Drive, Eden Prairie, MN 55344 fax to 952.917.0886 or apply on line at www.adc.com/careers.

Luceo, Inc. seeks Programmer/Analyst based out of our Naperville, IL loc. Design F/CO SAP solutions. Identify & design requirements, system development, configuration, testing, training and support of multiple business process areas in Finance Treasury and Controlling. Develop functional specifications to include interfaces, enhancements, reports, conversions. Some travel required. Must have Bachelor Business or related + 2 yrs relevant exp. Resume to Luceo, Inc., 1431 Kallien Avenue, Naperville, IL 60540

Marketwatch, Inc. has multiple openings in New York and Minneapolis for the following positions:

SOFTWARE
DEVELOPER (NY)
&
SOFTWARE ENGINEER/
DIRECTOR (MN)

Req. include BS deg. in comp. sci., engn., or rel. tech. field and relevant exp. designing, implementing and testing applications. Specific skill requirements vary by position.

Send resume to:
resume@marketwatch.com

Sr. Web Developer - NYC

Client interaction, analysis, design, dvlpmt using latest software technologies, incl. J2EE, SunOne 7 server, Oracle, business objects along with testing & integration, production support, enhancements & bug solving. Must have min. Bachelor's Comp. Sci., Engg or related & 2 yrs exp. Send resume: Hyatt Leader, 90 Park Ave., 24th Fl., New York, NY 10016.

Software Test Engineer - Mayfield Heights, Ohio

Entry Level position under strict supervision engaged in software testing activities for global manufacturer of industrial automation systems. Defines, develops and executes software test plans for a variety of company's industrial automation products including Data communication, Data acquisition and Networking software. Defines, designs, develops and implements different test tools and automated test ware to be used in the process of software testing using object oriented programming techniques. Uses programming languages, including C/C++, Assembly and Visual Basic. Develops test ware for exercising exposed interfaces to validate correct operation by applying knowledge of different testing and quality standards. Verifies that the released software meets all the design specifications. Works on cross-functional engineering teams to determine test outline requirements for new functionality. Communicates with different groups from different parts of world. Configures and sets up products ranging from Programmable Logic Controller (PLC) software to the DeviceNet, Controlnet and Ethernet network as part of system testing. Assists in troubleshooting customer applications as needed. Assists in presale customer support as needed. Works with other company and non company related software product applications to ensure the communications compatibility of the tested product. Required is a Bachelor of Science degree in Computer Science, Computer Engineering or Electrical Engineering. As part of the required education or any relevant experience, the applicant must have: had educational training or experience in configuring and testing networks and systems, and in utilizing software test methodologies including black box testing and white box testing; had education training or experience in developing and programming Visual Basic and SQA Basic applications; had educational training or experience with programming languages C/C++ and Assembly and with Windows operating systems; had educational training or experience with DeviceNet and ControlNet networks; had educational training or experience with Programmable Logic Controller (PLC) and in the use of Ladder Logic Programming software and had educational training or experience with Human Machine Interface (HMI) and related programming software. Must have proof of legal authority to work in the U.S. Qualified applicants may submit resume including job requisition #2636BR to M. Taft, P.O. Box 2086, Milwaukee, WI 53201-2086.

Oracle Corporation has the following opening at its Orlando, FL office: Support Engineer. Under detailed instruction, identify, analyze and resolve technical problems of computer software systems. Provide technical support by establishing test cases in similar environments, analyzing data setups and applying patches. Assist users and analysts in solving problems. Within defined practices and procedures, develop workarounds and suggest technical resolutions. May be assigned to various technical support projects that utilize skills. Requirements: Bachelor's degree or equivalent in Computer Science, Engineering, Business, Math, Physics, or related field plus 2 years in computer technical support. Must include 1) database technology, 2) C, 3) SQL, and 4) TCP/IP. Salary: $61,688/year. Jobsite/Interview: Orlando, FL. Hours: 40 hrs/wk, 8:30a.m. to 5p.m. Reply to Job Order FL2573498, Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302.

QUALITY ASSURANCE ANALYST, Lake Mary FL. Participates in developing & testing functional specifications in accordance with company standards. Reviews Technical Specifications & confirms functionality. Develops & executes Master Test Plans & Detailed Test Scripts. Participates in unit testing, system testing, functional testing, performance testing, integration testing, stress testing, user acceptance testing & regression testing where appropriate & in accordance with defined test plans. Reviews release literature & documentation prior to distribution. Uses communication abilities to provide support, direction & guidance both within the department & as needed by clients. Requires BS in Computer Science or equivalent, as well as 2 yrs exp as a Quality Assurance Analyst, Consultant, IT Research Assistant, AutoCad Instructor, Systems Analyst or related. Must have authority to work in the U.S. Send resume to Agency for Workforce Innovation, PO Box 10869, Tallahassee, FL 32302-0869. Re: JO FL#2569988

Programmer Analyst, multiple positions, to program, analyze, test, troubleshoot and develop Delphi software as a front end for use in multiple RDBM (such as Foxpro, Oracle, Interbase and Sybase) legacy informational systems installed in a distributed client server environment including implementation in an intra/internet environment. Uses tools such as MIDAS, SOAP, COM/DCOM, Object Pascal, ASP, ADO, XML, Web Logic Server, T-SQL, COBRA, DLL, TOAD, Quick Reports, IIS, Swing, JSP and CSS as required in performance of duties. Requires two years direct experience. Work location: Various, unanticipated client sites. Send resumes only, no calls, to: Perry Senapathy, Genome International Corporation, 8000 Excelsior Dr, Madison, WI 53717.

Programmer Analyst needed in Venice, FL. 40 hrs. per wk., 8 a.m. - 5 p.m. $65,000 per yr. Requires Bachelor's degree in comp. sci. Responsible for design, development & implementation of company web site used to deliver financial charts & publications to subscribed client's personalized sites, also responsible for new pages, web site maintenance, troubleshooting & ongoing improvement. Utilize extensive Java technology including Servlets, JSP and JDBC connectivity, XML, XSL & graphics. Unix, HTML, CGI, C++, network programming, SQL, common data structures & computer graphics & art. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869. Job order #FL-2578227

Software Engineer to design, develop, implement, test, support, and maintain software systems for various business management applications in a client/server environment using C, C++, XML, WS-Security, SAML, ebXML, XSLT, XPATH and Perl under Windows, Linux, and UNIX operating systems. Requires: M.S. degree in Computer Science or a closely related filed with three years of experience in the job offered. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to Rajender Gaddam, Orpine Enterprises, 1004 Crooked Creek Ct., Mableton, GA 30126; Attn: Job SP.

SOFTWARE ENGINEER to design, develop, test and maintain web-based application software using Oracle, HTML, JavaScript, Java, JSP, XML and Oracle Portal on UNIX and Windows platforms. Require: M.S. degree in Computer Science, an Engineering discipline, or a closely related field with 2 yrs. of exp. in the job offered or as an Application Developer. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to Bhavin Kusal, Popular Tech, 14151 Newport Avenue, Suite 204, Tustin, CA 92780; Attn: Job RK.

Programmer Analyst - Oracle Specialist - Multiple Openings

Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance and support of large volume on-line complex integrated client-server based business financial banking manufacturing and other commercial application systems in a multi-hardware/multi-software environment using centralized or distributed database systems using Oracle Relational Database Management Systems (RDBMS) and related software. Design of large application systems and databases in a Co-operative Development Environment (CDE) and analysis, design and development of applications using CASE (Computer Aided Software Engineering) tools. Bachelor's Degree (or equivalent) in Computer Science-Math/Engineering/Science /Business-Commerce and 1 yr experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 3 of B or 2 of A and 2 of B. A) includes Oracle RDBMS, Oracle CASE tools (Designer, Dictionary, Generator), CDE 2, Oracle Financials, B) includes PRO*C, SQL*Forms, SQL*Reportwriter, SQL*Plus, SQL*Menu, PL/SQL. High mobility preferred. 40 hrs/week, 8 am - 5 pm. $66,533 - $78,000 per year. Qualified applicants should contact or send resume to: Site Administrator, Greene County CareerLink, 4 West High Street, Waynesburg, PA 15370-1324. Refer to Job Order #WEB 472444

Computer

Senior Analyst Applications Programming

Developing, enhancing, testing, supporting, maintaining, and debugging Java Interactive Banking Automation (JIBA, an object oriented application which requires knowledge of Object Oriented design and development) on a UNIX platform and Java to support Customer Service and Support's Interactive Banking Call Centers (IBCC), Kana Desktop, and Softphone. Responsible for the complete lifecycle development of multiple projects, as well as providing guidance and reviewing work of less experienced associates. Providing maintenance of JIBA, Softphone, JOBE (JIBA Online Banking Enrollment) and services (Web Services Middleware). Position requires a Bachelor's degree or foreign degree equivalent in Computer Science, MIS or closely related field and 2 yrs exp in job offered or as an Analyst or Programmer. Also required: JIBA (Java Interactive Banking Automation), Unix, Object Oriented design & development, and Microsoft NT. $76,000 /year, M-F 8am to 5pm. Job site/ interview: Jacksonville, Florida. Please send resume to Workforce Program Support, P.O. Box 10669, Tallahassee, FL 32302-0669 and reference Job Order #FL-2574737

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Higher Standards

Computer - Staff Software Engineer Boca Raton, Florida. Design, code, implement, test and support software tools for embedded voice application development using Java, J2EE, C++, C, UML, XML, Websphere Studio Application Developer, WebSphere Application Server, WebSphere Portal Server, and install Shield on Windows NT/2000, Linux, AIX and Sun Solaris platforms. Requires Bachelor's Degree or equivalent in Computer Science, Management Info. Systems or Engineering plus (1) year experience in the job offered or one (1) year experience in the related occupations of Co-op, Lab Administrator or Intern. $77,375.50 per year. 40 hours per week 8:00am-5:00pm. Send resume to Job Order number FL-2572933, Workforce Program Support, P.O. Box 10669, Tallahassee, FL 32302-0669

SENIOR SOFTWARE ENGINEER (3 positions offered) to design, develop and support application software in a client/server environment using object oriented analysis C, C++, VC++, MFC COM/DCOM COBOL, DB2, MS SQL Server, Oracle SPII IVR, CTI experience with Intel Dialogic APIs and Visual Studio on Windows NT/XP UNIX and IBM MVS/OS390 platforms. Mentor junior engineers and programmers. Require Bachelor's degree in Computer Science, as Engineering disciplines or a closely related field with 5 yrs of progressively responsible exp in the job offered or as a Programmer/Systems Analyst. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to: SatishKumar Ashok, CSR Data Systems Inc., 21 Crestwood Street, Piscataway, NJ 08854. Attn: Job SB.

Software engineer to design develop and test computer programs for business applications; analyze software requirements to determine feasibility of design, direct software system testing procedures using expertise in WebLogic, TogetherJ, JRun Oracle WebSphere JNDI and RMI Requirements. Bachelor's Degree, educational or functional (3 years experience= 1 year of college) equivalent, in Engineering, Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of WebLogic WebLogic, TogetherJ, JRun, Oracle, WebSphere, JNDI and RMI. Salary $70,242/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Fayette County CareerLink, Attn. CareerLink Program Supervisor, 135 Waylan Smith Drive, Uniontown, PA 15401. Job No. WEB472190

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design, direct software system testing procedures using expertise in Business Objects, Informatica Power Center, Oracle Designer, DB2 and Oracle. Requirements: Bachelor's Degree, educational or functional (3 years experience=1 year of college) equivalent, in Engineering, Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Business Objects, Informatica Power Center, Oracle Designer, DB2 and Oracle. Salary $70,242/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: BECS/CareerLink Program Supervisor, Indiana County CareerLink, 300 Indian Springs Road, Indiana, PA 15701, Job No. WEB472201.

Programmer-Analyst: Plan, develop comp programs; eval user reqs, determine feasibility, cost, time, compatibility w/system; convert specs to coded instructs; enter codes; design displays, run, test, debug, correct syntax/logic; document devel, prep manuals, installation, training routines. 9a-5p. Req: Master's in Comp Eng, Comp Sci or related/equiv & 1 yr exp or as Software Developer. Resume: T. Fitzgerald, Venue Advert, 945 W 15 St, Riviera Bch, FL 33404.

Business Analysts

ThoughtWorks is a global, rapidly-growing application development firm looking for Business Analysts for its Chicago, Nashville, New York, & San Francisco offices. We build highly complex, high business value applications for Global-1000 clients. Analysts will interview client users & managers to understand & create functional requirements. Will document, define & review detailed business & functional requirements. Will work closely w/ developers & architects to build custom J2EE & .NET applications. Will conduct user focus sessions w/key client team members & be involved w/all phases of development (analysis, design, coding, testing, deployment).

Requirements: Bach. degree in Business, Finance, Computer Info. Systems or related field or foreign equivalent. 3 yrs. exp. in systems analysis on development of new & replacement application projects. Exp. must include gathering & developing detailed functional requirements for OO multi-tier applications & iterative development methodologies, such as Agile Methodologies.

BlueCross BlueShield of Tennessee seeks a Technical Systems Analyst for its headquarters in Chattanooga. Position requires a BS in Computer Science or related field and 5 yrs of experience in software consulting and programming. Experience must involve programming with MQSeries, WebSphere, J2EE, and .NET. Qualified candidates should send resumes to Stephanie Hawkins, Recruiter, BCBST, 801 Pine St., Chattanooga, TN 37402. Refer to Job Code: TSA1. EOE.

Computer Professionals (Multiple Openings) W/exp in one or more of the following: C/C++, JAVA, Power Builder, Visual Basic, Oracle, Developer 2000, Sybase, Windows, Unix Admin, People Soft, SQL Server, SAP, Oracle Financials, Cobol, Db2, Cics, MVS, JCL, AS/400. Lucrative compensation. Please E-mail your Resumes to the following address: INFO@ADVANSOFTUSA.COM

Attn: HR Department
AdvanSoft Worldwide, Inc.
2255 Lois Dr. Suite #9
Rolling Meadows, IL 60008
Visit
WWW.ADVANSOFTUSA.COM
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Don Tennant,
editor in chief
(508) 620-7714

Mitch Betts,
executive editor
(301) 262-8243

Julia King,
executive editor, events
(610) 532-7599

DEPARTMENT EDITORS

Craig Stedman, News editor ..... (508) 820-8120

Mike Bucken, assistant News editor ..... (508) 820-8562

Tommy Peterson, Technology editor ..... (508) 820-7729

Kathleen Melymuka, Management editor ..... (508) 820-8118

REPORTERS

Matt Hamblen, networking; mobile/wireless; network/systems management ..... (508) 820-8567

Heather Havenstein, health care; business intelligence; Web services; application development; application server software ..... (919) 233-7776

Thomas Hoffman, IT management and investment issues; careers/labor; energy industry ..... (845) 968-9630

Lucas Mearian, storage; disaster recovery and business continuity; financial services industry ..... (508) 820-8215

Linda Rosencrance, general assignment, transportation and automotive industries ..... (508) 628-4734

Carol Sliwa, Windows; Linux, RFID; retail industry ..... (508) 628-4731

Marc L. Songini, ERP; supply chain; CRM; food and agribusiness; databases ..... (508) 820-8182

Patrick Thibodeau, enterprise systems; Unix; outsourcing and immigration; antitrust issues ..... (202) 333-2448

Dan Verton, legislation/regulation; homeland security; federal/state government IT; travel industry ..... (703) 321-2277

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Todd R. Weiss, general assignment, open-source community; intellectual property issues; messaging/collaboration ..... (717) 394-3850

OPINIONS

Frank Hayes, senior news columnist ..... (503) 252-0100

FEATURES

Ellen Francine, special projects editor ..... (508) 820-8204

Robert L. Mitchell, senior editor ..... (508) 820-8177

Mark Hall, editor at large ..... (503) 391-1156

Gary H. Anthes, national correspondent ..... (703) 536-9233

Julia King, national correspondent ..... (610) 532-7599

COMPUTERWORLD.COM

Martha Connors, vice president/general manager ..... (508) 620-7700

Sharon Machlis, managing editor/online ..... (508) 820-8231

Ben Mingis, online news editor ..... (508) 820-8545

Marian Prokop, online editor at large ..... (508) 620-7717

David Ramel, e-mail newsletter/online editor at large (508) 820-8269

John B. Brilon, associate art director ..... (508) 820-8216

David Waugh, associate art director ..... (508) 820-8142

Peter Smith, Web development manager
Kevin Gerich, Mark Savery, Web developers

RESEARCH

Mari Keefe, research manager
Bonnie Wilson, research associate

COPY DESK

Michele Lee DeFilippo, managing editor/production (508) 820-8126

Bob Reason, assistant managing editor/production ..... (508) 271-8015

Mike Parent, Monica Sambataro, senior copy editors
Eugene Demaitre, copy editor

GRAPHIC DESIGN

Stephanie Faucher, design director ..... (508) 820-8235

April O'Connor, associate art director
Julie Quinn, senior designer
Susan Cahill, graphics coordinator
John Hausmar, cartoonist

ADMINISTRATIVE SUPPORT

Linda Gargano, office manager ..... (508) 820-8178

CONTRIBUTING EDITOR

Jamie Eckle, Opinions ..... (617) 566-1973

CONTRIBUTING COLUMNISTS

Peter Fox, Michael Gartenberg,
Dan Gillmor, Paul Gillin, Barbara Gomolski,
Thorsten A. Hau, David Moschella,
Bert Perkins, Paul A. Strassmann

CONTRIBUTING WRITERS

Mary Brandel, Russell Kay, Sami Lais,
Robert L. Scheier, Steve Ulfelder

GENERAL INFORMATION

TELEPHONE/FAX

Main phone number . . . . (508) 879-0700
All editors unless otherwise noted below
Main fax number . . . . . (508) 875-8931
24-hour news tip line . . . (508) 820-7710

E-MAIL

Our Web address is www.computerworld.com.
Staff members' e-mail follows this form: firstname_lastname@computerworld.com.
For IDG News Service correspondents: firstname_lastname@idg.com.

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MAIL ADDRESS

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Netezza Adds Data Warehousing Appliance

Targets firms with up to 1TB of data

BY HEATHER HAVENSTEIN

Netezza Corp. last week added an appliance to its data warehousing product line that's targeted at companies with 400GB to 1TB of data.

The move signals a focus on a new target market for Netezza, which traditionally has sold its hardware/software bundles to high-end companies with about 10TB of data, according to Netezza executives. The new NPS 8025 model of Netezza's 8000 Series data center appliance line rolls together servers, database software and storage that let users analyze large amounts of business intelligence data, said Jit Saxena, co-founder and CEO of Framingham, Mass.-based Netezza.

"Companies today want to look at all the detail of their customer transactions, of their clickstream transactions — huge amounts of data," Saxena said. "We have been able to use commodity components, [and] we can put the processing power where it is best utilized to keep costs low." In Netezza appliances, the CPU power is next to the data, enabling quick analysis of large amounts of data, he explained.

Analysts said that while the appliance could appeal to smaller companies that don't have extensive data warehousing expertise, Netezza could face a rougher reception at sites that have standardized on hardware and databases.

Epsilon Data Management Inc. has used the Netezza appliance to integrate several smaller databases, said Mike Coakley, vice president of marketing technology partnerships and alliances at the Wakefield, Mass.-based marketing services company.

In addition to providing Epsilon customers with the speed needed to analyze large amounts of data quickly, the appliance has helped Epsilon cut its maintenance costs. "If you're buying big IBM iron and then you have to put the relational database on it and add the disk, those are significant costs," Coakley said.

Dan Vesset, an analyst at IDC, said that users in small companies and in departments of large companies may find the appliance appealing because they often don't have the IT expertise to manage separate data warehousing components.

In addition, Netezza has a unique feature that allows users to load data into the appliance, do ad hoc analysis and then dump the data, he said.

Wayne Eckerson, director of research at The Data Warehousing Institute in Seattle, noted that Netezza is one of the first vendors to offer an appliance for data warehousing. As a result, Eckerson said, its customers so far are mostly early adopters.

"We're seeing companies moving gradually into appliances, [as most] companies have already committed to database and hardware platforms," he said. "Changing those things is not done lightly."

In addition, the full 8000 Series appliances were upgraded to offer improved workload management and faster bulk data movement speeds. **50926**

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Tacoma

Consulting Inc. for unforeseen customization work.

"They threw the switch at one time, and a lot of failures happened," said Scott Huntley, communications supervisor for the city. The extensive project gave the city an integrated system to run all general operations, such as police, fire and utilities. End users learning to use the new system initially complained about implementation problems, he said.

Of late, the most pressing issues have been problems with the financial module, which have led to delays in hammering out the city's budget. There have also been performance issues with the SAP CRM software that supports the city's five utilities.

Tacoma's system problems have become so prominent that city councilor Julie Anderson last month filed a resolution calling for an audit.

"The City of Tacoma is experiencing unanticipated costs in operating the system, and there are significant gaps between our expectations for functionality and how the SAP system currently operates," Anderson said in an e-mail. "As an elected official, I am unable to determine if these issues are due to SAP software, management of City of Tacoma employees, or poor consulting services from TUI."

Problem Areas

"Technically, 99% of the system is working fine," said Mark Crisson, CEO of Tacoma Public Utilities. The problems have tended to be mostly the result of implementing new processes and formats that SAP supports, he said.

For instance, some of the bills the CRM application generated were difficult to understand compared with their prior format and led to a flood of service requests, Crisson said. The city had to add staffers to handle the increase in requests and paid $270,000 to TUI to make modifications.

Tacoma now has a much-desired work management system to help support job-order fulfillment. However, utility service representatives have to plow through as many as five screens to access customer data. That forced the city to sign a $405,000 contract with TUI last month to do some extra work, including collapsing the customer data into a single screen.

Some of the early problems have been solved, officials said. For instance, the payroll application issued inaccurate checks, but that was related to manual errors that haven't recurred, said IT personnel.

More significant were the problems with the budget module. The difficulties of switching to the new system, combined with a $30 million city budget shortfall, resulted in a "perfect storm," said David Otto, director of business information systems for Tacoma. Despite this, the city was able to meet its preliminary budget deadline of Oct. 31 and expects to have its final numbers by year's end.

AT A GLANCE

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"The city of Tacoma violated one of the key rules of a big ERP implementation," said Joshua Greenbaum, an analyst at Berkeley, Calif.-based Enterprise Applications Consulting. "They tried to do too much, too fast." He added that Tacoma "didn't hold the integrator's feet to the fire on the nondelivery of functions."

SAP has no worries about an audit, said spokesman William Wohl. He noted that R/3 has enabled Tacoma to establish common practices and become more efficient. "The software is helping transform city government in a way not otherwise done with its legacy systems," Wohl said. "At the end of the day, the customer has said the software tools are an asset." **50934**

Denver Mends Broken ERP System

MUNICIPAL ERP rollouts are especially challenging and ripe for problems caused by a lack of applications expertise, the silo-like organization of city departments and intense public scrutiny, said Mike Locatis, CIO for the City of Denver.

Locatis himself has coped with turning around a troubled PeopleSoft ERP implementation. Hired last March, his first task was to get the stalled rollout moving and help Denver get the most from its IT assets.

The troubles included a payroll system that was issuing inaccurate checks – something that became a "well-publicized" problem, even though no one ever missed being paid, Locatis said. Denver solved it by installing a service pack and undertaking staff training efforts.

The problems arose in part because of a lack of accountability. The Denver project was being overseen by a steering committee rather than by a CIO, Locatis said. That governance setup exists in most municipalities, which are made up of independent agencies. Rolling out ERP software in such an environment is like installing a system in 30 companies at once, Locatis said. "It's really important to have appropriately strong management," he added.

– Marc L. Songini

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FRANK HAYES ▪ FRANKLY SPEAKING

Open-Source Java?

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And sure enough, Sun *didn't* open-source the forthcoming version of Java, code-named Mustang. Instead, the Mustang source code went up on the Net under the Java Research License.

If you aren't sure just what that means — well, neither is Sun.

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That's putting it delicately. The Java Research License was created specifically for universities and researchers. It's really not intended for what Sun obviously has in mind: getting a lot of open-source developers to look at the early snapshot, kick its tires, put it through its paces and generally give it an open-source-style once-over. Thompson even announced the source code's availability at an open-source event in Silicon Valley.

That makes sense, at least if you step back from the open-source politics and legalities. No, Sun doesn't want to give up its control of Java. But Sun *does* want to leverage the "many eyeballs" effect of open-source — the fact that the more people you have looking at source code, the more bugs they'll find.

And not just what we traditiooally call bugs. All those eyeballs can also spot inelegant designs and problematic approaches. They can bring far broader experience to bear than any traditional group of code reviewers, and they can apply the perspective of end users and business requirements.

The eyeball effect isn't the only advantage of opeo-source development, but it's one of the most powerful — and it's the easiest one for non-open-source developers to crib. They just have to be willing to let lots of people see their source code.

That's the benefit Sun clearly gets by going this route — if you ignore the politics and legalities.

FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

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And if Sun really does get large numbers of people agreeing to its relatively restrictive research license, its terms could give Sun ammunition should the company ever decide to launch its own legal attack against someone Sun thinks is improperly using that Java source code.

Pretty impressive batch of implications for Sun deciding to use the Java Research License, isn't it? True, this faux open-source approach will irritate open-source purists. But let's face it — Sun really doesn't care if those purists are pleasantly surprised or not.

And when you consider just what Sun gets from "research-sourcing" Java, there's really no surprise at all. 50697

SHARK TANK

Tricky, Very Tricky

Big airplane maker has a problem with its big, expensive plotter: The paper shifts intermittently while printing big drawings. After weeks of repairs and even swapping out the plotter, vendor sends pilot fish to see if it's a software glitch. "A plot began, and as the paper traveled rearward, the edge wafted up and struck the wall behind the plotter with a loud *thwack*," says fish. "With hardware support and five engineers watching, I simply pushed the plotter away from the wall another few inches. Problem solved."

Another Satisfied Customer

New-IT manager marches into pilot fish's office and demands that fish add a new shared network drive – for just one file. But, fish points out, the file could easily be e-mailed to everyone in the company. Manager doesn't buy it. And the file is rarely used, says fish. No soup, says manager. And we're out of new drive letters, fish says. "You owe at least try," manager insists. "I log in, check a few logs, delete some files and defrag a small drive," says fish. "Then I turn around and say, 'I'm sorry. I tried. It doesn't work!' He leaves satisfied."

Looking Ahead

It's 1999, and this IT pilot fish plows out testing for Y2k-related duties: leap year 2000, year-end 2000, etc. "All testing is accomplished successfully, and we're all feeling pretty good about the effort we've put forth," he says. But at a review meeting, fish's boss asks if fish has tested for the year 9000 yet. "And worse, he's serious," fish groans. "I tell him we'll just have to let our descendants worry about that century change."

No, Wait, Stop!

New-hire help desk pilot fish gets the call from a receptionist whose tab key isn't working. "I remembered seeing a huge monitor on her desk, so I told her to shake the keyboard upside-down and tap one corner on the desk," fish says. "No luck. I then told her to pick up one end about two or three inches off the desk and drop it. Hearing a loud thud, I asked what she was doing. She said, 'I am dropping one side of the laptop they just got fixed for me yesterday.'"

That's Where I've Seen Him!

This company's employee newsletter has a picture of an IT intern on its cover, introducing a story inside about interns. One of the senior analysts tells pilot fish that the guy in the picture certainly looks familiar, but the analyst just can't place him. Says fish, "That's when I told her the intern in question had been sitting at the workstation behind her for the past six months."

SHARKY'S STILL HERE TOO. Send your true tale of IT life to sharky@computerworld.com, and you'll score a sharp Shark shirt if I use it. And check out the daily feed, browse the SharkVerse and sign up for Shark Tank home delivery at computerworld.com/sharky.

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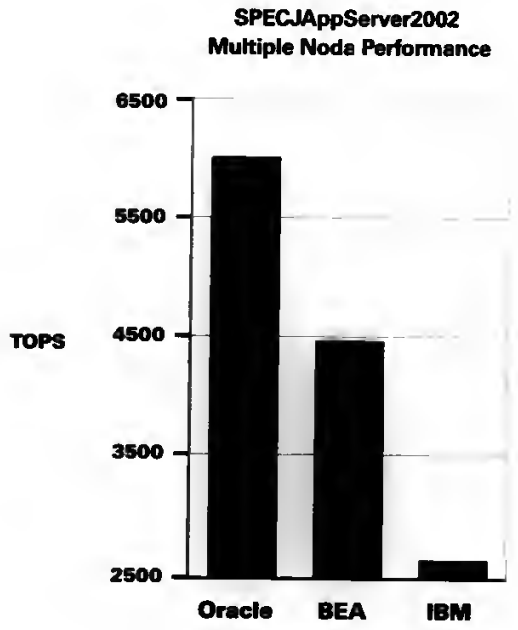

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